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InformationWeek

THE BUSINESS VALUE OF TECHNOLOGY

JULY 20, 2009

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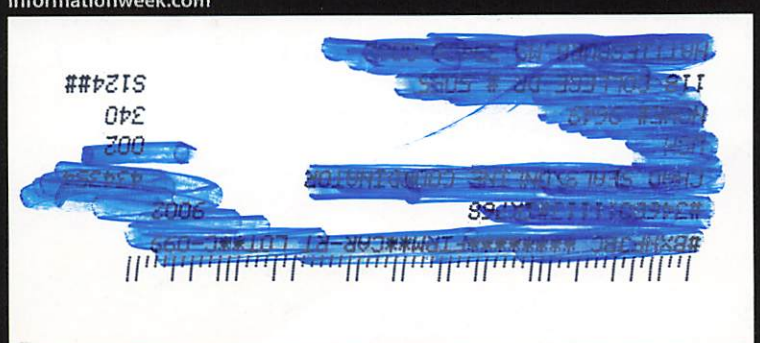

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Tech SPECIALIST: *Business Continuity*

CDW's Moosa Matariyeh discusses the importance of having a disaster recovery strategy.

Q **Disaster recovery has always been an important topic when it comes to business continuity. What is so imperative about disaster recovery now?**

It's the convergence of a number of things. One is the globalization and the removal of borders in business. The world's become flat, as has the marketplace, so imagine it as a supply chain: If you are a kink in the chain, you are immediately removed. We've become a society of immediate gratification and fulfillment of needs. If an organization can't fulfill the needs that it's called upon for within that business chain, then it will be taken out, and another competitor is waiting in line to take that over. Businesses are relying on IT more than ever before, so if IT is not up [and running] it will take that business down and delay fulfillment.

Moosa Matariyeh is an Enterprise Storage Specialist for CDW. He has more than 12 years of experience in IT, handling various positions in systems engineering and administration, design and implementation, and consulting. His current responsibilities include architecting storage and virtualization consolidation solutions, disaster recovery and business continuity solutions, and virtualization initiatives.

Q **What can companies do to prepare for disaster recovery effectively, and what are some best-practice examples from medium-sized enterprises?**

First and foremost, companies need to understand what IT is needed in order to continue doing their business. Historically, you'd need an enterprise-class SAN or you needed to be a Fortune 100 or Fortune 500 company to be able to afford IT disaster recovery strategies. That's no longer the case. A perfect example is an organization

I work with that has a centralized location in Indiana and a number of sales offices around the country. This organization replicates its business-critical applications to a remote sales office. There are no hosted services needed, no enterprise-class SAN—they have only a couple of servers, and this solution works very well for them.

For more on business continuity, visit the Tech Specialist Profile Series Web site:

TechSpecialist.techweb.com

*Video interviews *Case studies
*White papers *News stories

Q | One of the most difficult aspects of disaster recovery planning is the risk assessment, which complicates the ability to justify costs. How have companies successfully made the case for adequate funding?

So, really, the first part is the risk assessment—understanding what you need to continue doing business. And part of that is involving the stakeholders in the matter, which is something IT has shied away from doing in the past. They need to speak to their stakeholders, be it the department heads, somebody in finance, whoever it is, to understand the cost if their business were to go down because of IT. What applications are truly needed to [stay] up and running, and who relies on what applications?

Once you understand that, the way you need to liken it so that the people on the business side of the house can [understand] it is to relate it to something they are used to: an insurance policy. You have fire insurance and you have health insurance. You don't plan on getting sick, you don't plan on having a fire, but you have it there for those problems. The way to justify the need for a disaster recovery plan is by understanding what the cost of being down is. It can include peoples' salaries, the loss of revenues during that time, and there's also a future possible loss. Again, the world has become flat. There are no more borders in business. The next competitor is in the wings waiting to take your business.

Q | What role does data deduplication technology play in disaster planning and recovery?

Data deduplication is actually playing a couple of roles in backup and recovery. One is making it easier to meet your backup windows. This will reduce the amount of data that you are backing up, in turn reducing the amount of time it takes to back up that data. The way it is doing that is either through a source-based or a target-based deduplication strategy. So either the data is deduplicated prior to being sent over the line, which is good for remote offices, or it can be at the target. The second thing is it reduces the amount of data being stored on disk. This will lower the overall cost and [help] the organization be able to recover that data much quicker.

* * *

To see our video interview with Moosa Matariyeh and to learn more about business continuity, please visit TechSpecialist.techweb.com.

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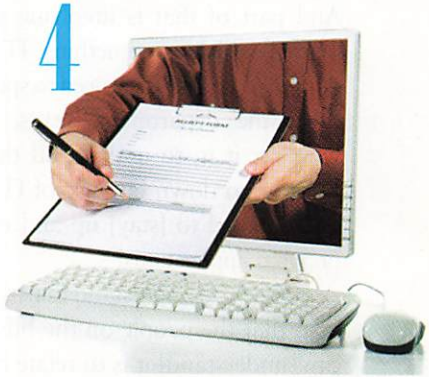

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informationweek.com/alert/managerisk

Google Rethinks The Operating System

Google announced its Chrome OS to both applause and skepticism. We examine the company's promises, as well as the many questions about what it means for users, enterprise customers, and cloud computing.
informationweek.com/alert/chromeos

Government IT On The Leading Edge

Software that learns how to schedule your day. Supercomputing tricks our PCs will borrow. Networks resilient enough for outer space. We take a look at these and other bright ideas coming out of government agencies.
informationweek.com/alert/govtinnovation

Risk Intolerant

Security pros continue to move from protecting systems to protecting data—a development long overdue.
dataprotection.informationweek.com

Why Automation Is Good For IT

Untethering staff from manual chores doesn't just reduce the chance of errors. CIOs also can maximize virtualization and deliver more reliable business services.
informationweek.com/tw/automation

Mainframe Madness

Too many enterprises are running parallel IT operations, with big iron and distributed groups barely crossing paths.
informationweek.com/tw/mainframe

[InformationWeek Green Issue]

InformationWeek continues to lead the IT media market with a 10-year strategy for reducing and ultimately offsetting the carbon footprint of producing our print magazine, including a PDF-only version of our Aug. 3 issue. For details, visit
informationweek.com/green

APPLICATION DELIVERY

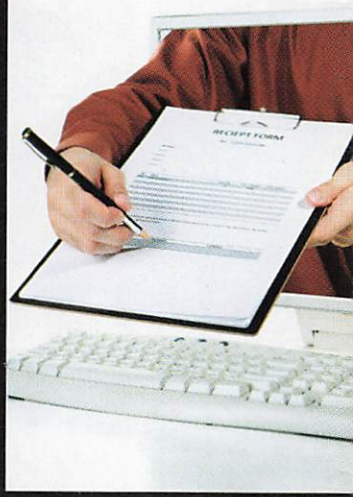
With IT asked to support an increasingly distributed workforce, ensuring business apps flow smoothly to all users is critical. Seventy percent of the 267 business tech pros we surveyed use or plan to use application delivery methods to tackle this issue. Here's what functions they say are key to an application delivery strategy:

76% Bandwidth management

75% Application and network monitoring

69% Authentication and access control

Find out more in our report, free for a limited time:
apmreport.informationweek.com



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Optimization And Virtualization

Join this interactive Webcast session and find out how organizations are simplifying their large-scale virtualization projects. It happens July 22. Register at:
informationweek.com/tw/virtual

Acceleration Anywhere

Ready to deliver applications virtually anywhere? In this *Network Computing* digital supplement, find out how integrated application delivery, WAN optimization, and virtualization increase app availability and performance. Look for it soon.

Network Computing

Firefox 3.5 Unveiled

In this video, Mitch Wagner takes a look at Firefox 3.5, including some of its new user interface features, privacy mode, and geolocation capability.
informationweek.com/video/firefox3

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BOB EVANS

Join us to discuss three core, inextricably linked themes: business value, customer value, and the global economy

Insights From 12 World-Class CIOs

On Wednesday, July 29, *InformationWeek*'s Global CIO will bring to your computer more than a dozen of the world's top CIOs and business technology specialists to discuss and debate the most challenging issues they're facing in a global economy that, while troubled, still requires relentless innovation, business focus, and competitive breakthroughs.

Called "The Global CIO Summit: Driving Business Value And Customer Value In The Global Economy," this daylong, online-only virtual event will offer huge insights into how a dozen of the world's top CIOs are outflanking their competitors in these areas:

>> Giving their companies the ability to design, source, build, market, sell, and support products around the globe.

>> Offering their customers an expanding set of options for engaging with those companies on product ideas, self-service approaches, and customized experiences.

>> Leading IT teams that must balance the need to control costs with the need to continue to find new and better ways to help increase revenue, find new customers, reduce cycle times, and optimize business processes.

We'll focus on three core themes that are inextricably connected to one another: business value, customer value, and the global economy. More than ever, business technology is the tool that lets companies pull those three approaches together by letting customers engage more intimately with the businesses from which they purchase, no matter where in the world those buyers and sellers happen to be located. Interested? You can register at *informationweek.com/1236/event.htm*.

And we've brought together a superb set of CIOs and other thought leaders from around the world to share their ideas for how they're making that happen: keynoter Ralph Szygenda, corporate CIO at General Motors; Ramón Baez, CIO at Kimberly-Clark; Jody Davids, executive VP of shared services and CIO at Cardinal Health; Christiaan De Backer, CIO at TomTom; Peter Hinssen, author of *Business/IT Fusion*; Andrew McAfee, associate professor at Harvard Business School; Jai Menon, CIO of Bharti Enterprises; Patty Morrison, former executive VP and CIO at Motorola; Steve Phillips, CIO at Avnet; JP Rangaswami, managing director of strategy and innovation at BT; Toby Redshaw, global CIO at Aviva; and Manjit Singh, CIO at Chiquita Brands.

The featured sessions from our online event:

>> Ralph Szygenda's keynote discussion of how he and his team at GM have developed the concept of "Precision IT" that's driven by standardization, simplification, and collaboration.

>> "CIOs And Productivity: How Social Media Motivates and Inspires Innovation."

>> "Should Global CIOs Help Drive The Business, Or Align With The Business?"

>> "The Global CIO's Strategic Role In The Market And In The Boardroom."

>> Sessions led by our sponsors.

You can find the full agenda for the event here: *informationweek.com/1236/agenda.htm*

While it might be appealing to think about just keeping our heads down for a while and focusing on cost cutting until the economy improves, today's Global CIOs are helping transform their organizations into externally focused and global enterprises. Please join us on July 29 and share in the discussion.

Bob Evans is senior VP and director of InformationWeek's Global CIO unit. Write to Bob at bevans@techweb.com. Register for the event at informationweek.com/1236/event.htm.

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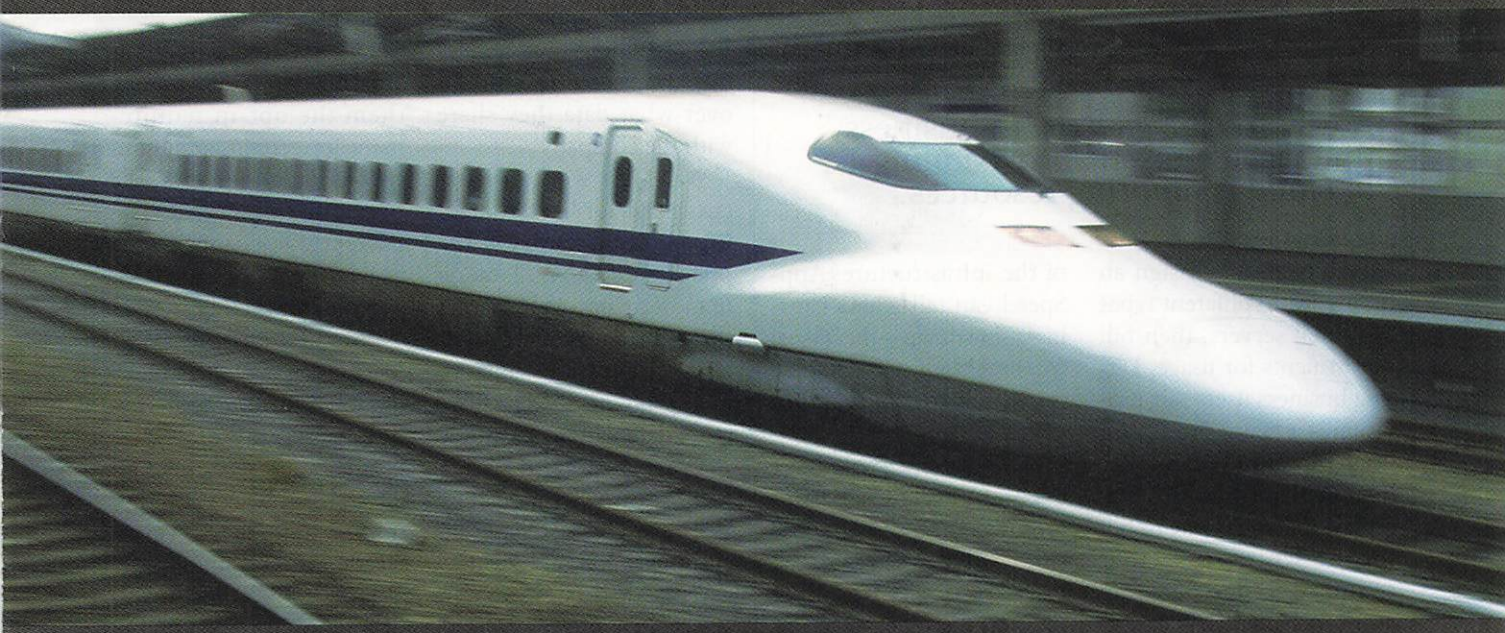

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QUICKTAKES

VIRTUALIZATION

VMware Fills Gaps In Management Tools

VMware has made two key additions to its vCenter virtual machine management software. It's including chargeback, a basic ingredient for running virtualized data centers in a more cloud-like way, and performance monitoring, which is becoming essential as more applications that are critical to business operations get virtualized.

The chargeback function lets IT managers assign an hourly fee to different types of virtual servers, then bill departments for usage. Letting business users self-provision is a major promise of internal cloud computing, but one that could be a disaster if there's no way to bill for it. Until now, that required clumsy workarounds. Chargeback costs $750 per CPU.

> A way to ***charge back*** to business units is key to ***self-provisioning*** of ***cloud computing*** resources.

AppSpeed, at $1,250 per CPU, monitors virtual application performance to ensure that apps run as well in virtual mode as in physical mode. AppSpeed maps the software infrastructure, establishes baseline performance on physical servers, and then monitors applications running in virtual machines.

By mapping dependencies between the virtualized application and other parts of the infrastructure, AppSpeed can tell what's causing a slowdown—the virtual machine itself or a database on which the application depends.

Management tools have become the latest battleground among virtualization software vendors. VMware rival Citrix Systems is making a move by offering a free version of its Essentials for Hyper-V, the leading management tool for VMs created under Microsoft's hypervisor. The free version can only handle two virtualized hosts; after that, licensing fees are $1,500 per server.

—Charles Babcock
(cbabcock@techweb.com)

DIG DEEPER

Virtualized App Management
Download our in-depth report at
apmreport.informationweek.com

See all our exclusive research at informationweekanalytics.com

Getty Images

PRIVACY POLICY

Wal-Mart Change Hints At Data-Driven Marketing

Wal-Mart has begun promoting a new privacy policy on its Web site, on signs in its stores, and in e-mails to about 15 million customers. For the first time, the world's largest retailer's privacy policy now covers both stores and online operations, and it gives customers more control over what data they share with the company.

Wal-Mart wouldn't discuss plans for how it might use personal data, but the policy suggests it's looking to more aggressively market through new channels, including text messages to mobile phones, and to share more data with its partners.

The 3,500-word policy focuses on when and how Wal-Mart collects data from customers and on how data gets used. Customers can select their preferred communication channels at a new privacy preference center on Walmart.com. Wal-Mart won't send marketing messages or surveys or share information with third parties for marketing purposes unless customers opt in at the preference center.

"We want to provide customers with more control over their own data, which is a big topic today for relationships with customers and their privacy," says Zoe Strickland, who became Wal-Mart's first chief privacy officer three years ago, following a similar job at the U.S. Postal Service.

The updated policy has "stricter standards," among them the opt-in requirement for certain communications, Strickland says. The previous policy made no references to channels such as text messages and third-party telemarketing.

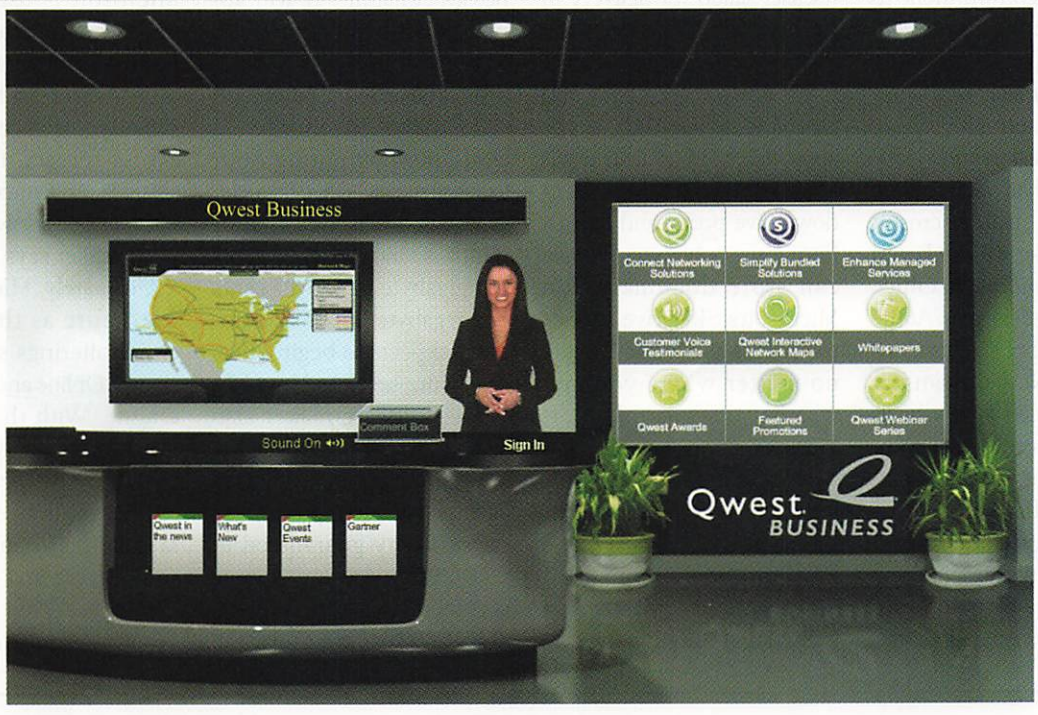
For the first time, Wal-Mart says it may share information with "selected vendors who may offer you products and services of interest," the policy reads. For that to happen, however, customers must opt in.

The policy reflects Wal-Mart's range of businesses—with details about data collected at pharmacies, banking, and vision centers. For example, it notes that by law Wal-Mart collects data on purchases of pseudoephedrine, sometimes used illegally to make methamphetamine.

—Mary Hayes Weier
(mhayes@techweb.com)

LOOK BEYOND

InformationWeek and Qwest® Communications invite you to visit the Qwest Beyond Business Connectivity Resource Center and make the most informed communications decisions for your enterprise.



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Microsoft will do the hard part, Muglia says

MICROSOFT

Cloud Plan: Free Office, And Per-Use Pricing

For those who doubt Microsoft's commitment to cloud computing, two recent moves—one on the desktop, one in the data center—suggest it's very serious.

In its boldest acknowledgment so far that cheap online software's a threat, Microsoft plans to make a Web-based version of Microsoft Office available free next year. At the same event, its Partners Conference in New Orleans, it also announced a new business model for its forthcoming Windows Azure operating system that will let customers pay for cloud operating system resources on a per-use basis, taking on providers such as Amazon.com.

Microsoft's new Office 2010 release, slated for delivery in the first half of next year, will include free Web versions of Excel, PowerPoint, Office, and OneNote. Office Web, as the apps are called, will be available from Microsoft's Windows Live portal and launch from a user's browser. People can store documents on Microsoft's SkyDrive service to "access your documents no matter where you are, whether that's at an airport kiosk or Internet cafe," says Chris Capossela, senior VP for Microsoft's business unit.

Pay Per Use

With Azure, Microsoft will charge only for the services and bandwidth businesses consume. It will apply the same model to SQL Azure and .Net Services.

At a basic level, Microsoft says it would charge 12 cents per computing hour on Azure and 15 cents per gigabyte of storage. Bandwidth is charged at 10 cents per gigabyte in and 15 cents per gigabyte out. The company expects to begin offering Azure services Nov. 17.

The software maker also says it would provide written uptime and service-level agreements—computing and connectivity guaranteed at 99.95% uptime and storage services guaranteed available 99.9% of the time.

To ensure that uptime, Microsoft is using what it calls the Windows Azure Fabric Controller technology. Azure Fabric is designed to balance workloads across servers, manage resources, and reroute work if a server goes down, the software maker says.

Ultimately, Microsoft will use Azure as the base for cloud offerings such as Exchange Online and SharePoint Online. With the platform, "Microsoft manages the complexity," so partners can focus on their businesses, says Bob Muglia, president of Microsoft's server and tools unit.

—Paul McDougall
(pmcdougall@techweb.com)

WINDOWS 7

XP's Day Of Reckoning Is At Hand. Prepare.

Windows 7's Oct. 22 release will be an exciting day in Redmond, but IT folks should mark it for another reason. It's the beginning of XP's end.

Don't get me wrong, I'm not a raving XP fan. But Vista's flop gave us a long run with a relatively stable platform that actually got better over time. You can buy a new machine today with a clean XP SP3 image and have the same look and feel you had when XP came out in 2001.

A lot of companies are doing just that, with 70% of corporate desktops still running XP, Forrester finds.

Full Vista rollouts are rare, and instead most tend to have what Roy Atkinson, director of end-user support at the Jackson Laboratory, calls "Vista leak-out." Less than 5% of Jackson's several thousand desktops run Vista; most are on XP. "We only deployed Vista if there was a driver or application that clearly worked better," he says.

It would be nice to have the tighter security, 64-bit OS, and higher performance networking of Vista. But delays, bugs, hardware requirements, and bad market perception have held it back.

There's no need to jump off XP yet, but it's going to get harder to stick with it, especially later next year. Mainstream support for XP ended April 14. This means Microsoft doesn't have to release any new features or make any design changes. Security fixes will be released as needed, but non-security hot fixes won't be released to the public.

Phone support is available if you're willing to pay and if you bought extended support from Microsoft (that deadline was July 14).

"So what? I don't call them anyway," a particularly anti-Microsoft IT director says. He should read the support terms closely, because there's more here than the end of free phone support. This is Microsoft's official way of saying it can leave XP alone if it wants, ending all feature updates and enhancements.

XP could start to get short-

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changed on feature development as soon as Oct. 22, when Windows 7 and Windows Server 2008 R2 are released. The new Windows Server 2008 R2 features—including DirectAccess, which provides simplified remote access; BranchCache, an automated file-caching option for remote offices; and an updated offline folder synchronization capability—will only work with Windows 7 clients. No XP or Vista updates are planned.

If Microsoft adds any features for XP, it would have to add them for Vista, too, and Microsoft is moving as fast as it can away from Vista. Windows 7's October ship date is three months earlier than the company's targeted January 2010 release date. Businesses can get it Sept. 1. Microsoft early? I have the same stunned reaction as when my 6-year-old cleans his room, and I find myself asking, "What's he hiding?"

Other Influencers

HP, Dell, Lenovo, and all the other PC makers will continue to support XP; their laptops and desktops all offer supporting drivers. But manufacturers will now have to support three Microsoft operating systems—7, XP, and Vista—each requiring a slightly different development and testing program. These companies work on tight margins, so the chance to cut that cost by a third is going to be quite appealing as time goes on.

What would get people like Atkinson to move off XP sooner? "If manufacturers were to stop making drivers or showed a Windows 7 driver that dramatically improved performance," he says.

It's fairly easy for vendors of major applications—accounting, operations, etc.—to keep providing XP support. The problem for XP is going to be support system software, especially antivirus and antimalware products. Most have already announced Windows 7 support, though only for their latest versions. They're going to want to migrate upward in order to focus on the common core OS that's part of Vista and Windows 7. You can also expect vendors that want you on Windows 7 to start touting the ability to run "XP Mode," which is a Windows XP virtual instance (or an instance of an XP-compatible app) on a Windows 7 machine.

One other question is what version will run on netbooks, which have quietly slipped into IT and engineering hands all over the place. The great thing about these little machines is they can run XP Pro, and they fit right in with all your desktop management tools.

But the future OS for the corporate netbook is fuzzy at best. Windows 7 lower-end editions are aimed at the netbook, but they don't have domain login or group policy features needed for a corporate setting. The final Windows 7 release will show how beefier versions run on a netbook; if they can't authenticate against the domain, they'll be of limited use in any company. If it doesn't fill the authentication gap, you can expect multiple vendors will step in.

Do The Math

Assuming you've purchased some new gear this year, and you'll be keeping it for four or five years, you're looking at a replacement cycle in 2013 or 2014. That means you'll have to deal with the new version of Office announced last week (see story, p. 12) and four to six core server upgrades. Don't forget, Microsoft isn't required to release any enhancements or bug fixes to make XP work with these newer products.

So that's it, it's time to get a Windows 7 strategy in place. At a minimum, you should have someone download the Windows 7 release candidate and start checking it out. You'll want to know if your key vendors are getting their apps tested and certified for Windows 7, and get a plan in place for a pilot and rollout.

As for alternatives to Windows 7, don't count on Google's Chrome OS. It won't be ready for secure, compliant computing for a while. If you're set on a Linux kernel, Novell's way ahead, but you'll need a Novell-centric directory structure for true management and control.

Macs still lack an enterprise set of tools that work seamlessly without requiring Mac servers. Plus, your Apple deployment would have to include Microsoft Office for the Mac, which doesn't include Outlook.

In reality, if you want a robust OS that's focused on giving users a ton of options, has plenty of hardware and software vendors fighting for your business, and has the third-party tools and support to give you the control over access, security, and data, it's Microsoft.

But will it be XP or 7? It remains to be seen whether the need to obtain ongoing support will end up forcing companies to move off XP, or whether they'll be able to make this decision more rationally, based on their budgets, the software's features, and the potential ROI.

—Michael Healey
(mhealey@nwc.com)

3 Steps To Take

TIME TO GET MOVING ON WIN7

> **Download the release candidate** Get your team looking at it. Windows 7 is built on the same core as Vista; you'll want to double-check any problems you had on Vista with the new OS.

> **Vet your software vendors** Make sure they're well on the way with testing and certification. Historically, app vendors lag 6 to 12 months behind in support—make sure it's not more.

> **Have a plan** Start laying out your pilot and rollout plans. You can assume Microsoft will push hard to have a service pack released by next summer. That brings you into fall 2010 to start major rollouts.

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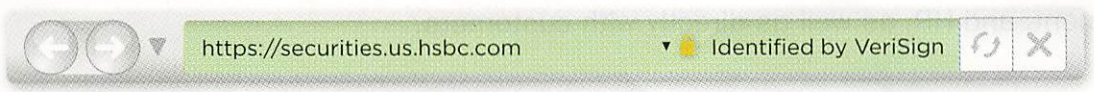

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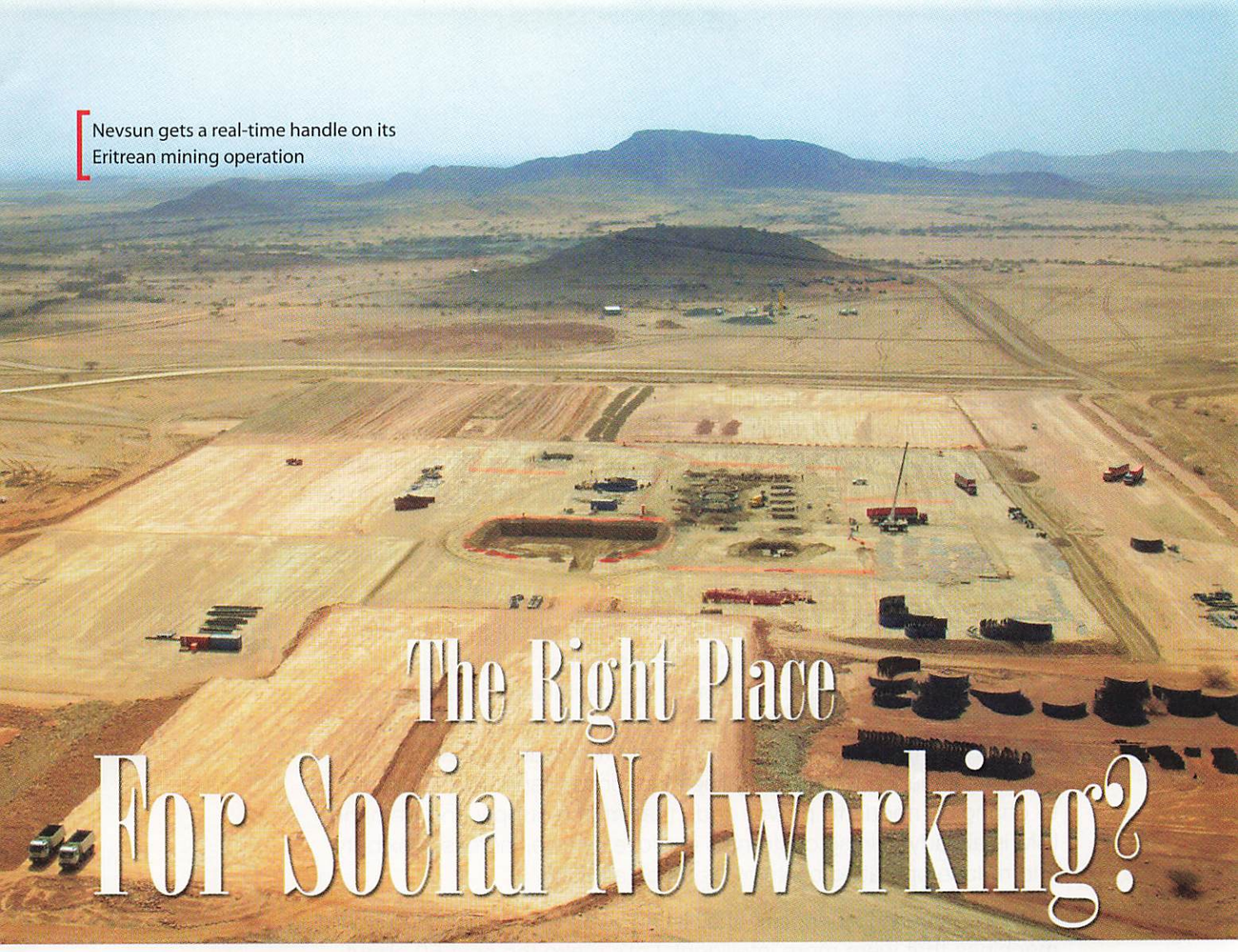


Nevsun gets a real-time handle on its Eritrean mining operation

The Right Place For Social Networking?

IT leaders are wrestling with how to bring informal collaboration into rigorous processes such as global project management and product development

By John Soat

Nevsun Resources is a mining company with headquarters in Vancouver, Canada, and its biggest project is developing mines in Eritrea, a small country on the east coast of Africa. Using a browser-based, software-as-a-service project management tool, logistics clerks, engineers, and project managers are sharing documents, cost outlines, and project schedules across continents, giving CFO Peter Hardie in North America what he calls a "real-time review" of the project in a fairly remote area of Africa. "The spectrum of people using it is broad, and that's what we were hoping we would get out of the system," Hardie says.

The system—called Unifier, from the vendor Skire—lets Hardie "bridge the time and distance gaps that exist between the project principals in Vancouver, Eritrea, and South Africa," he says. It helps Nevsun control costs and track expenditures down to the invoice level.

Social networking norms increasingly are creeping into formal project

internet evolution

Part of an ongoing series assessing the future of the Internet. For more, check out *internetevolution.com*. Contributors to its ThinkerNet blog include Jeff Fleischman, chief digital officer at TIAA-CREF, and Robert Housman, executive director of the Cyber Secure Institute. Internet Evolution features industry-specific content in its IT Clan and Security Clan sections.

Smarter technology for a Smarter Planet:

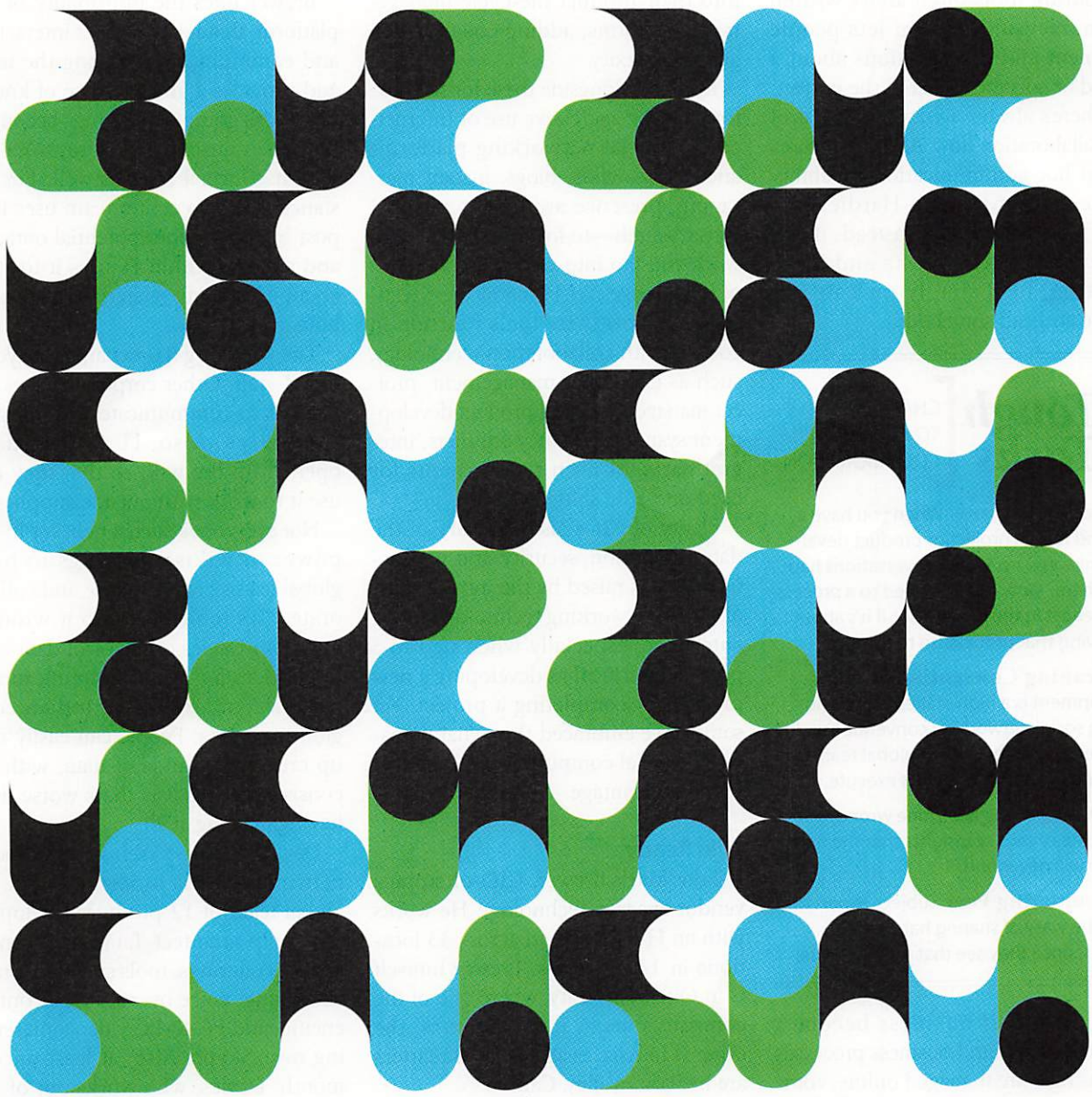
Can an entire business be given a nervous system?

Datacenters used to be a fairly straightforward concept: air-conditioned rooms that housed the physical machines that powered a company's IT capabilities. But on a smarter planet, intelligent devices connected by powerful service management systems are redefining the role of the infrastructure at the core of the enterprise. If digital intelligence can be infused into things like production equipment and supply chains, then the datacenter isn't simply the nervous system for IT. It's the nervous system of the entire business.

But that will require a broader way of thinking about infrastructure. Not as a collection of disconnected pieces, but as an integrated system that connects the datacenter to all of the digital and physical assets of the business—a nervous system that can sense and respond to change. From railway systems that can predict and schedule their own maintenance to assembly lines that understand how to adjust to changing needs to power grids that match supply and demand, IBM is already helping customers improve service, increase flexibility and reduce operating costs by as much as 50%.

From a computing standpoint, the last 50 years were largely about building machines that were more intelligent. Let's make the next 50 about extending that intelligence across a smarter, more dynamic infrastructure.

A smarter business needs smarter software, systems and services. Let's build a smarter planet. ibm.com/infrastructure



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planning and product development tools and processes. And at many companies, the rules both formal and informal for how to use those social computing tools often aren't written down. Nevsun's system lets people comment and ask questions about a record or specific aspect of the project. But there's always a way to opt out of the collaboration flow. Asked if he uses the ad hoc communication capability in the Unifier system, Hardie says: "Me, personally? No." Instead, if he's reviewing specific costs and has a question, he'll simply pick up the phone and call somebody.

4 Tough Tasks

CHALLENGES TO AD HOC COLLABORATION

1. Creating Norms When you have a wiki and formal project or product development software, what conversations happen where? One idea: If it's tied to a process step, keep it in the formal tool. If it's about improving that process, go to the wiki.

2. Breaking Convention Product development is a high-stakes process. Injecting social networking conventions adds risks. Yet it could be vital to global teams that innovate ideas as well as execute.

3. Finding Insights Done wrong, wikis can create islands of insights that the right people will never find.

4. Conquering Fear Subject experts might be wary of sharing hard-earned insights, since they see that as their value.

As almost all business becomes global in nature and business processes increasingly are managed online, companies continue to push the limits of technology created to manage projects and teams across time zones and geographies. The goal is to communicate more effectively, work more closely with partners, leverage ephemeral information sources, and ultimately get as close as possible to the feel of what's really going on.

Nevsun's experience with Skire is just one cross-continent example. In product development, vendors such as Dassault Systèmes, Siemens, and others are plowing Web 2.0 capabilities into their product life-cycle management platforms, adding collaboration and complexity.

Running alongside these formal platforms is the aggressive use of Internet-centric social networking platforms and tools—wikis, blogs, instant messaging, presence awareness, peer reviews, search—to foster internal teamwork and tap into wider communities of knowledge. Yet IT teams are wrestling with how these tools function in concert with collaboration technology, such as document management, project management, and product development systems. Are they adjuncts, integral parts, or even replacements for tried-and-true software?

Plenty of CIOs also are wary of the data integration, security, and productivity issues raised by the introduction of social networking technology in the enterprise, especially when tied to a process as critical as developing a new product or completing a project. Yet some have embraced the dynamic nature of social computing and turned it to their advantage.

Wiki Ready

Take Mark Brewer, CIO of storage vendor Seagate Technology. He works with an IT staff spread across 33 locations in 13 countries. Brewer himself is in Oklahoma City, where one of the company's major data centers is; the other is in Asia. Seagate's headquarters are in Scotts Valley, Calif.

For formal project management, Brewer and his IT team use CA's Clarity portfolio management system. "We use it to track programs, projects, dates, costs, etc.," he says.

Recently, though, Brewer has become a believer in the power of wikis. For the last year and a half, he's been using a wiki-cum-blog tool called Confluence from Atlassian. He's set up a wiki—IT@Seagate—which he contributes to two or three times a week. "I use it as a forum to communicate with IT folk."

Brewer likes the informality of the platform, that it encourages interaction and communication among the team and provides a greater sense of knowing what's going on. "Things become a lot more transparent," he says. Yet the wiki has formal roles as well. For instance, the data center team uses it to post bulletins about potential outages, and a group within IT uses it to "talk about everything related to data warehousing," he says.

The wiki/blog has expanded beyond the IT staff. Other corporate execs are using it to communicate with Seagate employees. Also, IT staffers have opened up the wiki so that they can use it to work with outside suppliers.

Not everyone's such a believer in the power of wikis and blogs to help global teams communicate and collaborate. "It's too easy to do it wrong," says Tom Davies, director of data center services for Tata Communications, the telecom arm of the Indian conglomerate Tata. People can easily end up creating "islands of data, with no consistency, in a way that's worse than having nothing at all."

Davies does use Web 2.0 and social networking tools to interact with his global team of 12 product developers who help architect Tata's data center services offerings, tools such as instant messaging, voice over IP, Web conferencing, and PC-to-PC videoconferencing over Skype. Also, at least once a month, Davies, who works out of his home in Orlando, Fla., travels to Tata's Herndon, Va., corporate office to participate in a videoconference with company officials in India using Cisco's high-end, room-sized Telepresence system.

It's the knowledge-gathering tools that Davies is wary of, particularly wikis and blogs that promise the functionality of knowledge management

software but deliver less. "Unless you have that taxonomy for what data goes in and what it's used for, you end up with a lot of information for no reason," he says. The use of wikis and blogs "has to be clearly defined," he contends. "I haven't yet seen a company do that."

So what do Davies and his team use? For resource material, they tap documentation libraries on an intranet. For collaboration, he says, "there's an awful lot of e-mail."

Grudgingly, Davies admits he'll end up implementing some kind of collaboration and knowledge management system that will incorporate wiki and blogging capabilities, probably within the year.

The Replacements

Social networking software is still struggling for a corporate identity. SharePoint is one of Microsoft's fastest-growing products, and it's newest version combines social networking capabilities such as wikis and user profiles with file sharing. The same is true for IBM's Lotus platform, with its Connections social networking software. Given their base of enterprise customers and ability to bring in functions such as formal workflows, these vendors could help bridge the gap between formal and informal project collaboration. But there also are some relative newcomers targeting the enterprise with social networking tools.

For Brewer, who's been using the Confluence software for 18 months or so, the wiki is a general-purpose sharing and collaboration platform that can be used to store project information and documentation, as well as perform other functions. It's not intended to replace the more fully functional project management system. "We use both," he says.

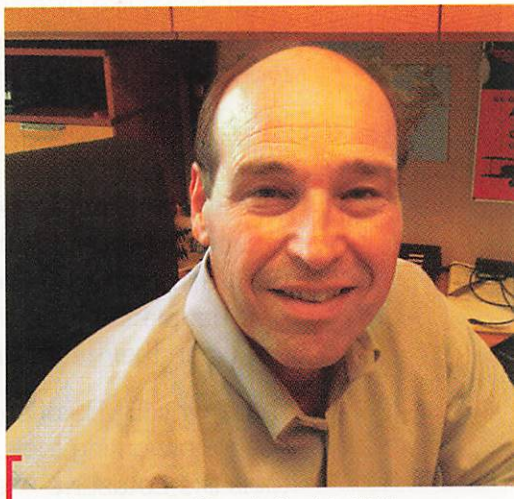
Yet, Brewer has been able to "sunset" a file-sharing system his group was using to create "intranet pages locked down behind passwords"—a waste of data and resources, in his opinion, since the wiki's a more inclusive alternative.

Bill Hopkins has an even bigger ambition for wikis. The director of global IT for international executive recruiter Egon Zehnder has swapped out nine applications for sharing information in favor of a single wiki-based collaboration system from Socialtext. But the real prize will be phasing out the company's "core CRM system" by this fall and replacing it with a system he's calling Orchestra, based on the Socialtext technology—a move that comes with major culture implications for the company.

Egon Zehnder has 1,500 employees in 65 locations in 40 countries. The majority of them are tasked with seeking out high-end executive talent for open positions. In the past, Hopkins says, those executive searches were mostly location based, specific to the requirements of a certain geographic region. Two recent trends have changed that. First, Egon Zehnder is handling more "pan-border" searches, for companies looking to tap executive talent anywhere it's available. Second, new requirements are influencing search criteria. For instance, experience with "green" initiatives is a very desirable attribute in an executive these days that translates across the globe.

As new thinking was being applied to searches, Hopkins says, corporate strategy had to change, too. Egon Zehnder could no longer be "office centric"—that is, rely on local teams of researchers and consultants employing face-to-face "huddles," or impromptu brainstorming meetings, to exchange notes and plot search strategies. It had to figure out "some way to get this round-the-clock thinking without taking time out of the busy day or night to have conversations," Hopkins says. The company needed people to share thoughts that were "not necessarily vetted for gold-standard communication."

Ross Mayfield, chairman of Socialtext, says companies like Egon Zehnder show how social networking is spurring a collaborative approach that's eclipsing the "follow the sun" time-zone hand-off strategy touted as a productivity boon from globalization. That kind of "batch processing" is inefficient, he contends, while "wikis are very asynchronous. People can focus on the flow of work when it's time to get work done."



Hopkins sees a wiki replacing his CRM

Community Minded

An area of business that involves substantial teamwork and collaboration that's fertile for social computing is global product development. Indeed, the major vendors of product life-cycle management software have embraced the promise of Web 2.0 capabilities and the potential of social networking tools specifically. PTC, a PLM tool vendor, has begun using the term "social product development" to describe its interpretation of the intersection between product development and social networking. In June, PTC introduced a version of its product data management application, Windchill, which uses SharePoint as a collaboration engine. Windchill ProductPoint is intended to make "the whole process of interacting much more free-flowing" for engineers involved in

Smarter technology for a Smarter Planet:

Can the boundaries of a business be defined by its people instead of its walls?

Businesses like nice solid walls, both the physical and the fire variety. But on a smaller, flatter, smarter planet, we increasingly find ourselves working with people far outside those walls: partners, suppliers, customers and remote employees. Instead of protecting, those nice solid walls stand in the way of how people want to work.

IBM is incorporating new tools like social software, wikis, blogs and presence awareness throughout its entire collaboration portfolio to help people in companies reach beyond their walls. The next challenge is to give people the tools they need anytime and anywhere they need them, not when their tech department has time to set them up.

That's why IBM is offering a new way of accessing its collaboration and social networking tools: through the cloud. To the individual, cloud-based tools like LotusLive™ let people work securely with whomever they want to, regardless of what side of the firewall they find themselves on. To the organization, these collaboration tools enhance the productivity of its employees without the cost and complexity of building and managing any additional infrastructure, giving them a seamless extension of their capabilities. And it's all backed by the legendary security that companies expect from IBM. So organizations don't have to tear down their walls to reach beyond them.

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product design, says Robin Saitz, senior VP of solutions marketing and communications.

Social networking tools can fill a significant gap in the PLM process, says Jim Brown, president of TechClarity, a PLM consulting firm. That's because PLM technology is "designed to incorporate results but not all the steps that led up to those results." For instance, when designing a product, a global design team might discuss different business, marketing, or technology approaches. That discussion represents a lot of shared knowledge, "and a lot of that knowledge is lost, typically in e-mail," he says. Someone going back looking for all of the process and decision making that went into the product will find that interaction "hard to re-create."

Still, vendors may be ahead of their users in this trend, and there might be more resistance than they anticipate, as companies worry about adding informal collaboration to the discipline of product development.

IRobot designs and markets Roomba, the self-propelled floor-cleaning robot, as well as other commercial robots and robots for the federal government. The company uses PTC's PLM tools, including the Windchill product data management product, in design centers around the United States and in India. At the same time, iRobot outsources all its manufacturing: commercial products to Chinese manufacturers and the products it develops for the U.S. government domestically.

CIO Jay Leader says iRobot is looking to leverage its design technology and data, and increase collaboration with suppliers. For one, Leader is working to integrate PDM data with data in the company's Oracle ERP system. For another, he's also looking to bring the company's manufacturing partners more closely into its design and development process. To accomplish that, Leader is working on providing them with "secured access into a secured portion of the Windchill system." That access for outsiders will come "via the tools themselves, in controlled ways," he says, and not through ad hoc social networking technology.

PTC's Saitz, who was an engineer at Raytheon before she came to PTC, admits the product design community is worried that the introduction of Web 2.0 and social networking tools will "undo some of the consolidation work that has been done" through the use of standardized PLM technology.

"The question is, how integrated into your actual process do you want to use it?" says Tom Emmerich, president of PLM vendor Dassault Systèmes Americas. Dassault uses the term "PLM 2.0" to describe its approach to the intersection of Web 2.0 and PLM. Much of Dassault's PLM 2.0 efforts, with its V6 platform, focus on taking advantage of broadband networks that change what's possible in terms of shared online access to design visualization and 3-D capabilities. It also allows for online communities around projects. The vendor recently took an equity stake in BlueKiwi Software, a developer of wiki tools. But Emmerich emphasizes that social networking technology has its limits when it comes to formal structured design. "Nobody's going to design products on Facebook," he says.

Sanjeev Pal, who worked at Dassault before becoming research director in the project portfolio management and PLM areas at IDC, says engineers may be wary of using social tools even in a closed-loop environment like PLM because they don't want to share their personal trade secrets, the wisdom built up over a career that they see as their value add to the company. "Engineers don't embrace the idea of information sharing," Pal says. "They're scared of losing the IP they've gathered over the years."

Tried And True

There's a long way to go before social networking constructs and tools take the place of tried-and-true project management and product development systems—or even blend comfortably into today's processes. That's because those collaboration systems are familiar, secure, and, for the most part, functional.

Black Diamond Equipment manufactures gear for outdoor sports including rock climbing and skiing, and uses the Teamcenter product development system from Siemens PLM Software. CIO Josh Dees says the Teamcenter technology lets the company's global distributed teams—in the United States, Switzerland, and China—communicate in a central place about issues and milestones that come up in the design and production process. "Instead of a lot of 'Hey, we have an issue about a heel on this boot' going across on e-mail," he says, that communication can be logged into the Teamcenter system, where it can be backed up and restored on regular schedules and audited.

Of course, not all of that type of communication finds its way into the system, Dees admits. "'All' would be a strong word to use," he says, noting that there are still occasions "where people plop in and out of e-mail." Still, he adds, "more and more, this will be the place where that communication takes place."

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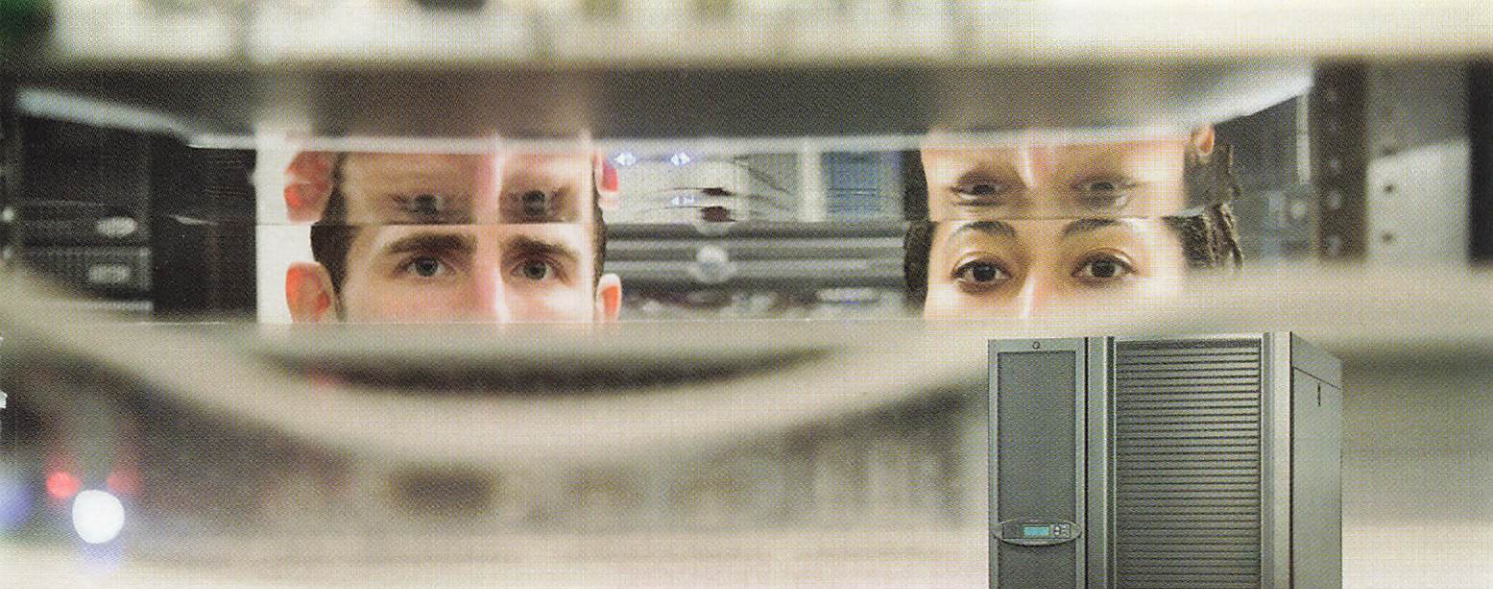

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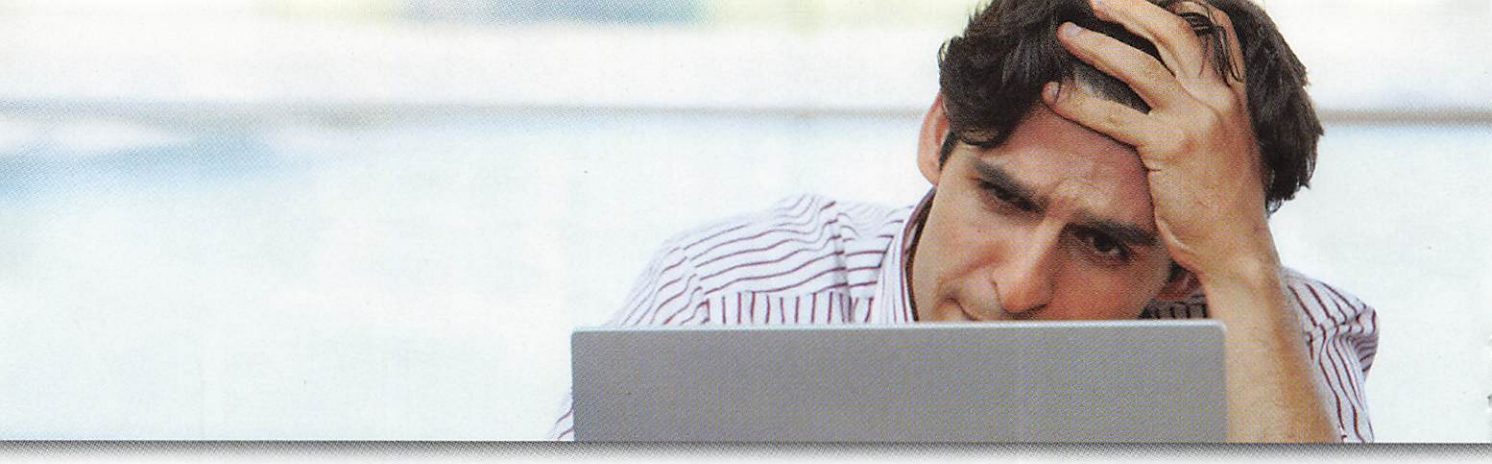

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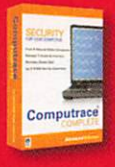

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CHROME

It's not Google versus Microsoft. It's about where the Web plays in the future of your employees' desktops.

By Andrew Conry-Murray

In the two weeks since Google announced its Chrome OS, it has been hailed as a Windows killer and written off as dead on arrival—quite a range of outcomes for software that isn't even finished.

Whether Google can unseat Windows on consumer netbooks doesn't really matter if you're in business IT. Beyond the excitement over Google's announcement is a more critical question, one that CIOs have been wrestling with for some time: Just how dramatically will Web-centric computing change how software and applications get delivered to end users?

Google argues that the Web will be the platform for virtually all applications, with the browser as the access method for getting to them. Given the growing popularity of software as a service, both for consumers and enterprises, Google paints a compelling picture.

But there are two problems with that vision. First, CIOs have any number of critical Windows-oriented applications that won't migrate to the Web because of development costs, technical problems, or security and privacy concerns, ruling out a Web-only existence for large tracks of employees. Microsoft CEO Steve Ballmer maintains that half of users' PC time is spent outside the browser. That doesn't mean there's no role at all for a lightweight, Web-optimized OS, but such a product may be best suited for a subset of employees, or alongside Windows, not in place of it.

Second, while it's true the Web disrupts the way applications are delivered and consumed in the enterprise, old-guard software providers—from Microsoft to Oracle to SAP—are adapting to that reality. So are CIOs, who are accepting SaaS as an option for more applications and for a larger share of their IT infrastructure. However, Google seems to be equating the Web's power to transform applications with the need for a cloud operating

system like Chrome. IT executives aren't buying it.

While Chrome OS will debut on consumer netbooks, with products promised by late next year, Google is designing it to scale up to full-size PCs. This is typical Google, and history suggests that if it finds success with consumers (e.g., e-mail, online documents, and search), it will test the enterprise market as well.

A senior IT executive at a *Fortune* 50 company says Chrome OS "does spark our interest." However, he's quick to note the company has many applications that aren't browser-based, so "initially it would be for niche groups of users."

The Legacy App Problem

Pacific Northwest National Laboratory runs a mix of Windows, Linux, and Mac machines. CIO Jerry Johnson says he'd like to reduce, not increase, the number of operating systems the lab manages. Johnson, whose organization is overseen by the Department of Energy and conducts classified and unclassified scientific research, isn't all that intrigued by the promise of a better Web experience. Of the lab's 4,200 employees, "only 20% could live the majority of their time in SaaS," he says, referring to back office and human resources applications. The lab has a substantial portfolio of business and research apps that would be costly to transform to the Web or be barred from it because of government security controls.

Employees at the nonprofit Nature Conservancy seem like ideal candidates for Google-powered netbooks. They rely on Web apps from Salesforce.com and WebEx and spend most of their time in the field, where a lightweight, portable computer is an asset.

But the organization also has a number of business-critical applications, such as a graphics-intensive map program, that require client software. Israel Sushman, a technology and systems operations manager with Nature Conservancy, says he can't imagine that the organization would go to the effort of rewriting these apps for a new operating system or to push them to the Web.

That's a hurdle to Google or any other operating system provider that hopes to unseat Microsoft in the enterprise. "Legacy apps last forever, so even

TIRED OF WAITING

Instant-On As A Killer App

It often takes a few long, boring minutes for a PC to boot up, load Windows, open a browser, and finally reach the Web. While Google hasn't said much about Chrome OS's features, one it has promised—and that people covet—is instant access to applications.

"People want to get to their e-mail instantly, without wasting time waiting for their computers to boot and browsers to start up," Google VP of product management Sundar Pichai wrote in announcing Chrome OS.

However, other companies have a head start on delivering that idea, with Dell, DeviceVM, Phoenix Technologies, and Xandros among those developing "instant on" operating systems built on the Linux kernel that can get people browsing the Web in a few snaps of their fingers.

Dell Latitude ON is available on several Dell business laptop models. It bypasses Windows startup using the MontaVista Linux distribution, customized with Dell's help, running on a secondary processor to give users immediate access to e-mail, the Web, and read-only Office and PDF documents.

DeviceVM says its 2-year-old SplashTop operating system has shipped on more than 10 million laptops from Acer, Hewlett-Packard, Lenovo, LG, and other manufacturers. SplashTop is a lightweight, Linux-based OS with a Firefox browser that can boot up in less than five seconds and offers access to the Web, instant messaging, Skype, and some basic gaming.

Much has been made of Chrome OS as a Windows killer, but most instant-on operating systems co-exist with Windows. SplashTop, Phoenix Hyperspace, and Xandros Presto all can access the Windows file system in a dual-boot mode and load Office documents. SplashTop users choose whether to boot into Windows or SplashTop. Dell Latitude ON users have a button to load ON instead of Windows.

DeviceVM started offering SplashTop mainly for consumer netbooks, but the company plans to have a business-focused product later this year. Companies are testing it now. Beyond fast starts, it promises energy efficiency and an alternative to conventional thin-client computing.

SplashTop and the like are hardly household names. That's something the vendors hope Google will change. "A lot more people will be looking for instant-on now that Google is jumping into the market," says Sergei Krupenin, DeviceVM's senior director of marketing.

Is instant-on a killer app? It's not enough by itself. But as netbooks and laptops increasingly compete with fast-access smartphones as mobile computing devices, it's a feature they're going to need. —*J. Nicholas Hoover* (nhoover@techweb.com)

Instant Options

>> **SplashTop** Users choose SplashTop or Windows; a business version due this fall

>> **Dell** Offers instant-on on business laptops alongside Windows, using MontaVista Linux

>> **Phoenix** Touts power savings as well as speed; hopes Google will put some Hyperspace features into Chrome OS

as organizations add OS-neutral apps, most organizations have a majority of their applications requiring Windows," says Gartner analyst Michael Silver.

Windows 7 On The Way

Even if Chrome OS ships on schedule, businesses and consumers will have had a year to consider migrating to Microsoft's upcoming Windows 7, scheduled to become available to businesses in September and to consumers in October.

"One thing people are shortsighted about is they're comparing the vision of Chrome OS with XP and Vista," says Silver. "When Chrome OS finally ships, it's competing against Windows 7, which has a lot of promise around better performance." Meantime, Windows will have another year to build its lead on netbooks, more than 90% of which were sold with Windows in the first half of this year, according to market research firm NPD. (See related story, p. 50.)

DIG DEEPER

Why Windows Must Go Open Source Our case for radical change ahead for operating systems is at *informationweek.com/1219/report_windows.htm*

See all InformationWeek Analytics Reports at informationweekanalytics.com

At Pacific Northwest National Lab, Johnson plans to roll out Windows 7 to provide a more uniform environment for IT to manage, as well as to take advantage of features such as full-disk encryption and the ability to eliminate administrator privileges for end users. With those capabilities included in the OS, he'll be able to eliminate software add-ons from other vendors.

Think Web, Not Google

As CIOs ponder the future of the enterprise desktop, there's no other conclusion than they'll have to account for the Web in a more comprehensive way. SaaS is inevitable—most companies already are, or will be, using it. Deployments to tens of thousands of users are commonplace; Siemens, for example, plans to make SuccessFactors' talent management application services available to 420,000 global employees. SAP has laid out a strategy to build SaaS modules that work with its on-premises ERP.

And Microsoft just last week took a leap that will let people spend more of

"We had a customer come on board that was hosting at a competitor's facility. They decided to switch to SunGard, because they felt their current provider wasn't responding to their needs."
Sandy Koppelman
Senior Implementation Project Manager
SunGard Availability Services
SUNGARD
Availability Services

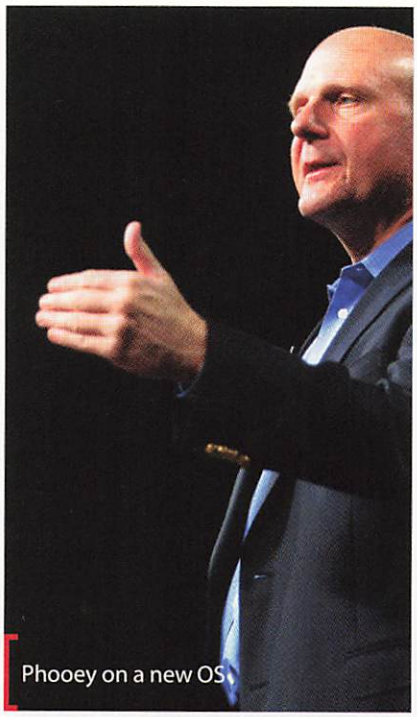
their time in Web apps by announcing Office Web, a free, browser-based version of Word, Excel, and PowerPoint. The move aims to prevent further incursion from free online word processing and spreadsheet apps from Google, Zoho, and others. The online apps will be available at the Windows Live portal and are expected to debut with Office 2010 in the second half of next year.

While Microsoft is aiming Office Web mainly at consumers, business users will likely adopt the service as an adjunct to their desktop software for ad hoc collaboration, online storage, and remote access to files. In fact, Microsoft's encouraging this approach: Business customers that buy volume licenses for Office 2010 will get access to Office Web at no additional charge. And it'll be available in a version for use in private cloud infrastructures.

The moves bolster Google's vision of a Web-centric user experience. But even if enterprises adopt Web apps in greater numbers and employees spend ever-more computing time online, it doesn't mean they need Google to do it.

That's the case Microsoft's Ballmer made at the company's Worldwide Partner Conference—though he also seemed to acknowledge Windows needs to change to keep up with the times. "We don't need a new OS," he said. "What we need to do is continue to evolve Windows and Windows apps—i.e., the way IE works within Windows—and we need to continue to evolve our applications, like Office."

If Microsoft doesn't do that, a likely scenario will be business users downloading Chrome OS or something like it to run alongside Windows to gain features such as instant-on Web access. Some people already do that with browsers, running Firefox as a preferred browser, with Internet Explorer for applications that require it. If Chrome is as lightweight an OS as Google describes, what's the harm of adding it to a workplace PC if it delivers a compelling Web experience?



Phooey on a new OS.

If Google wants to compete in the enterprise—or even for consumers—it must persuade a broad array of application developers to write software and drivers that work with Chrome OS. Google's choice of Linux as the underlying platform makes this developer support more likely than if it had started from scratch. But Windows remains the default operating system for businesses and consumers.

CIOs may be harder to sway than developers. Rather than try to transform legacy apps to work with Chrome OS, it will make more sense for most CIOs to simply stick with a fat-client OS that handles Web apps and client-server apps alike. At this point, Windows is better suited as the hybrid platform.

The Long View

Still, CIOs should expect to see Chrome OS show up in their companies one way or another. As we've learned from smartphones, flash drives, and Facebook, employees will bring consumer technology into the enterprise, with or without an expectation of support, and they'll use such tools for business purposes.

In fact, look for your own Linux hackers in the IT department to be the first to walk Chromed-up netbooks through the door. Netbooks will account for one in five notebooks shipped worldwide in the coming year, market researcher DisplaySearch predicts, while shipments of conventional laptops will be flat.

Given the growing market, Google has a shot at gaining respectable consumer market share if it produces a slick, fast, secure OS that delivers a great Web experience. And if Google succeeds with consumers, it's logical to expect it to steer that momentum toward the enterprise.

We already know what Microsoft's response would be to such a scenario—embrace and extend the best features of its competitor. The Chrome OS may turn out to be the best thing that ever happened to Windows—and its enterprise users—because real competition will spur Microsoft to make Windows even more optimized for the Web. Think how Firefox lit a fire under Microsoft to improve Internet Explorer.

Web-centric computing, with or without Chrome OS, already is spurring changes among enterprise software makers, as evidenced by Microsoft making key applications available in a browser and the likes of SAP and Oracle ramping up their software services.

CIOs should take the Chrome OS announcement as a similar warning shot. They can take a wait-and-see approach to the Google operating system, given its consumer focus and netbook emphasis, and the fact that it won't be delivered for more than a year. But it's clear that Web computing is accelerating and that CIOs must factor that into their next generation of applications, mobile devices, and desktops—with or without Google.

Write to Andrew Conry-Murray at acmurray@techweb.com

INTEGRATION CHALLENGE

Google's Complex Task To Deliver Simplicity

Google's Chrome OS almost certainly will be a better operating system than any we have today for running Web applications. Why? Because it's Google's operating system.

Google has developed dozens of Web apps—for documents, spreadsheets, messaging, and more—used by millions of people. It only makes sense that the company behind those apps is in the best position to tie them to netbooks and PCs. Google has the APIs, the know-how, and the experience—in client code with Google Gears, and in operating systems with the smartphone-oriented Android.

That doesn't mean Chrome OS is a guaranteed success. There's still a lot we don't know about it, including whether it will ever come with enterprise-class management capabilities and support. But Google is ideally positioned to create a better user experience in a software environment it manages and controls.

It's safe to assume that Chrome OS will excel in handling apps developed by Google; the real question is how well it will handle software developed by others, including developers who build apps on Google's own infrastructure using its App Engine tools. Google's promise: "All Web-based applications will automatically work."

But it won't be that easy. As shown by the nuts-and-bolts discussion at Google I/O, the company's annual developer's conference held just two months ago, deep programming work is sometimes required, and Google

"SunGard was willing to go that extra mile. We became a partner to the customer and worked hand in hand to deliver the customized solution they were looking for."
Sandy Koppelman
Senior Implementation Project Manager
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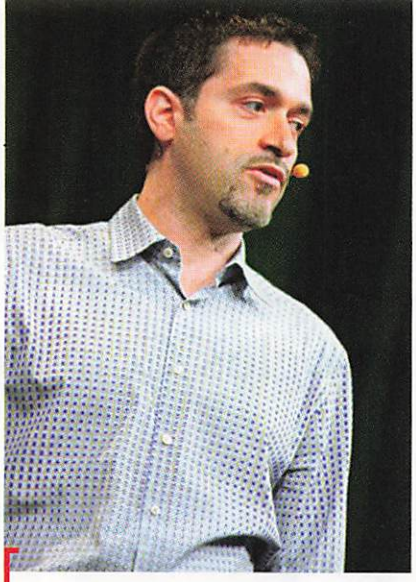
has only begun to solve many of the problems associated with getting client apps and Web apps to work together and behave consistently. "There's a broad category of things that native apps can do that Web apps can't do," Google engineering director Matthew Papakipos said in a session on HTML 5.

Among the technologies being brought to bear by Google to meld Web apps and PC performance are HTML 5, the WebKit browser engine, the V8 JavaScript engine, and Native Client, Google's nascent open source technology for running native code (code written for a specific hardware platform) in Web apps.

Chrome OS is being designed first and foremost with Web software in mind. Look no further than the Chrome OS interface—Google's Chrome browser—for evidence. Google describes Chrome OS as an extension of the Chrome browser, not vice versa. Giving the browser a leading role demonstrates that, for Google, the Web experience trumps the underlying computer system. Yet the hard work it's doing to meld client and Web performance shows that a "cloud OS" will still depend on powerful client computing.

At Google I/O, Brad Chen, engineering manager for the Native Client project, talked about the benefits of combining desktop CPUs and Web apps. They include "safer" multimedia codecs; real-time audio and video synthesis and physics simulations; local audio/video analysis and recognition; multimedia editors; high-throughput cryptography; and app-specific data compression. Native code has "about two orders of magnitude" more capabilities than JavaScript in a browser, Chen said.



Papakipos weighs native versus Web

Papakipos and Chen spoke prior to Google's announcement of the Chrome OS, but their presentations and others at Google I/O reveal some of the challenges and opportunities that Google faces in developing a cloud OS. The browser has simplified the way that applications are accessed, but there's still engineering complexity in bridging Web software and device hardware. The cloud OS must still manage device resources, networking, security, files, the user interface, and applications.

Integration Ahead

Other software providers may need to tweak their apps to work as advertised with Chrome OS. Salesforce.com has added hooks to Google AdWords, Google Apps, Google's Data API, and Google App Engine, and "official support" for Google's Chrome browser may be next, says Kraig Swensrud, Salesforce's VP of product marketing. It has taken close cooperation with Google and two years of work to get those results. But what about the many legacy and custom apps used in business? Any fine tuning required by Chrome OS would fall into the laps of already maxed-out IT departments.

Chrome OS is being designed for computing devices ranging from netbooks to full-size PCs. The degree to which it will exploit a fully configured

THE BASICS

What We Know About Chrome OS

After posting several blog paragraphs about its planned operating system that stirred up equal parts excitement and uncertainty, Google clammed up, refusing to provide details on its strategy, or even basic technical information.

Here's what we do know. Chrome OS is being built on Linux, though Google hasn't said which flavor, and the software is due to be released to the open source community later this year. Google's aiming first at users of consumer netbooks, for people who spend most of their computing time online and in the browser, with an emphasis on simple, secure, and fast Web access. People won't be able to install client-server apps on Chrome OS, so users will have to depend on Web tools such as Google Docs and online versions of Microsoft Office. Google will provide the OS on full-powered PCs after netbooks. It's treating Chrome OS as a separate project from Android, its Linux-based smartphone OS.

Netbooks—low-cost, portable computers whose main function is Web surfing—that run Chrome OS are supposed to be available in the second half of 2010. Chrome OS will be free and run on x86 and ARM chips. Google released a list of partners that will build devices for the platform, including Acer, Asus, Freescale, Hewlett-Packard, Lenovo, Qualcomm, Texas Instruments, and Toshiba.

HP's statement on the partnership was more shoulder-shrug than endorsement. "HP wants to understand all the OS choices in the marketplace that may be used by its competitors, and remains open to considering various approaches to meet its own customer needs. We want to assess the capability Chrome may have for the computer and communications industries, and so we are studying it." HP says it doesn't discuss products that "may or may not be under way."

—Andrew Conry-Murray (acmurray@techweb.com)

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PC—one with a 750-GB hard drive, for instance—is unclear, as are any plans for running standalone apps on Chrome OS. We'll get a better understanding of these and other questions when Google submits Chrome OS as an open source project later this year.

Google's forthcoming operating system is being written with speed, simplicity, and security as priorities, for users who spend most of their time online. It's designed to boot quickly (in a few seconds), and it will apply local caching and processing for times when users are disconnected from a network or otherwise working offline. Fast, wireless access to the Web could be Chrome OS's killer app. On the other hand, a dozen mobile operating systems, including Google's Android, are already positioned for that scenario.

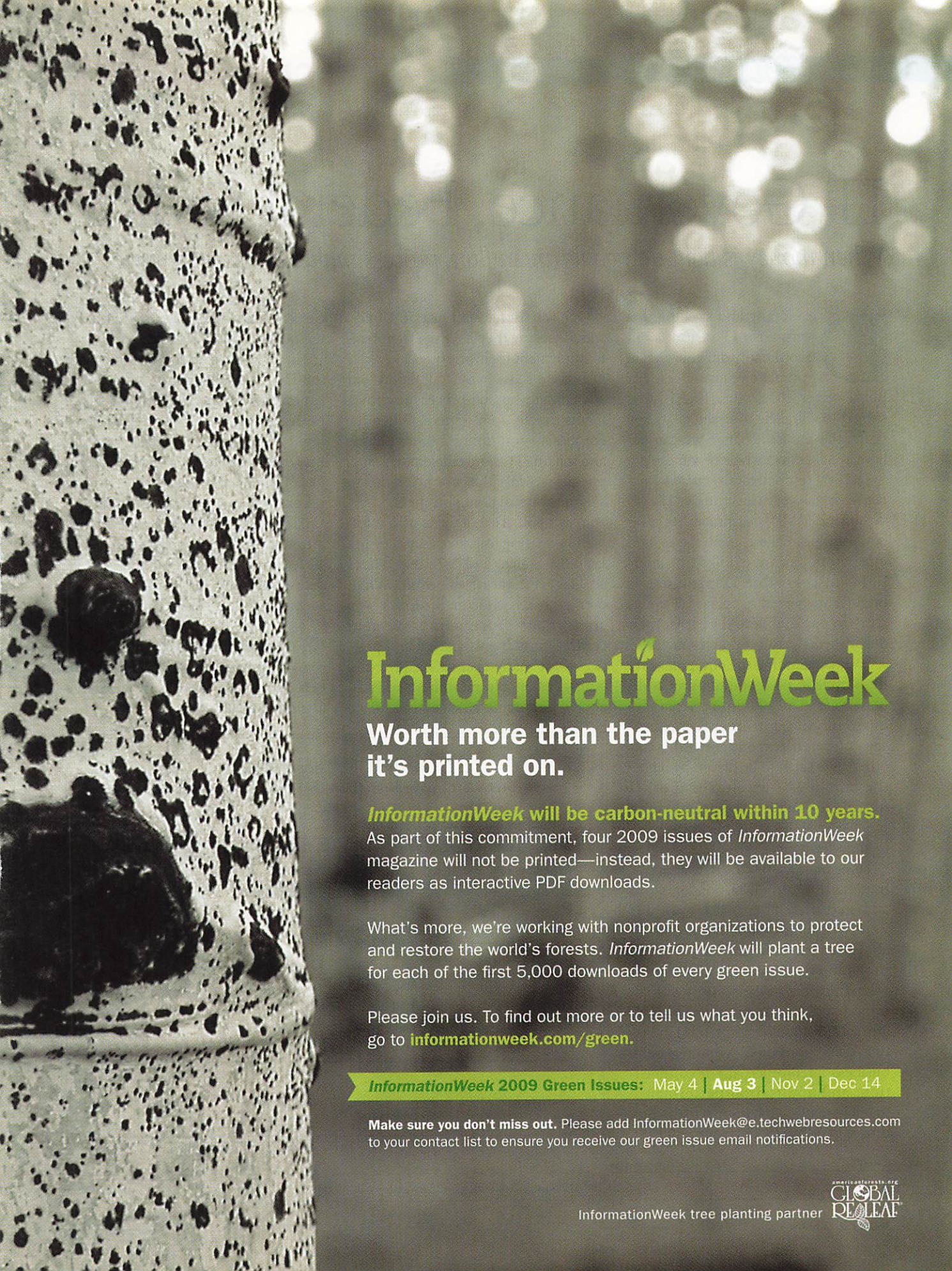
Google describes Chrome OS as "lightweight." In comparison, Windows has been called many things, but lightweight isn't one of them. Over the last 15 years, Microsoft's OS has swelled from 6 million lines of code (Windows 3.1) to more than 50 million (Vista), by some estimates.

That speaks to Windows' heritage as a PC operating system, but Microsoft has been gradually building Windows' bona fides as a cloud OS in its own right. Windows Live provides a range of Web-enabled capabilities, from messaging to data storage, while coming online versions of Office compare to Web tools like Google Apps.

What does Microsoft think about Google's Chrome OS? "There's nothing there to look at yet," says Doug Hauger, general manager of Microsoft's Windows Azure cloud services. At its Worldwide Partner Conference in New Orleans last week, Microsoft announced pricing and service-level agreements for its forthcoming Windows Azure services, which are due for general availability in November. While Google builds a cloud OS for the desktop, Microsoft is hurriedly building out a cloud OS for the data center.

Hauger is right that Chrome OS is only half-baked. (Windows Azure is, too.) Google is working with vendors such as Acer, Hewlett-Packard, Lenovo, and Toshiba to design Chrome OS-based devices. Such products, however, are still at least a year away. Speed and simplicity in the cloud may be fantastic design goals, but getting there is arduous work.

—John Foley (jpfoley@techweb.com)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IT Governance, Federal Style

When money is tight and goals are in flux, process makes all the difference

Developing and sticking to a long-term IT vision is extraordinarily difficult even in optimal circumstances. For public-sector CIOs, whose leadership is subject to complete overhaul every few years, the phrase "change we can believe in" takes on a whole new meaning.

The 309 respondents to our *InformationWeek Analytics* Government IT survey include U.S. government technology decision makers, contractors, and integrators. For these folks, the spotlight on the value IT provides is brighter than ever, as agency IT chiefs strive to stay nimble and increase their departments' return on investment.

"We're extending the equipment refresh cycle to use computers an additional year in an effort to preserve adequate funding for other priorities," says one poll respondent. Adds another: "We seem to be driven by where the money is—wireless and other funding for public safety—and not so much by the desire for effective, practical performance."

Three months into the new administration, 18% of poll respondents had adjusted their IT priorities. Others were in a holding pattern, understandable given the more than a dozen key programs that agencies need to develop (including cybersecurity, virtualization and data center consolidation, green IT, Federal Enterprise Architecture, continuous process improvement, business intelligence, the IPv6 transition, and application performance management), a changing fiscal picture, and a scarcity of resources.

One worrisome stat: Just 58% of respondents say they have the right tools to implement their priorities.

As we discuss in our full report, our advice is to pursue process improvements to free up resources. When the emphasis is on doing more with less and making IT more efficient, it's often not more tools that are needed, but smarter ways of doing business.

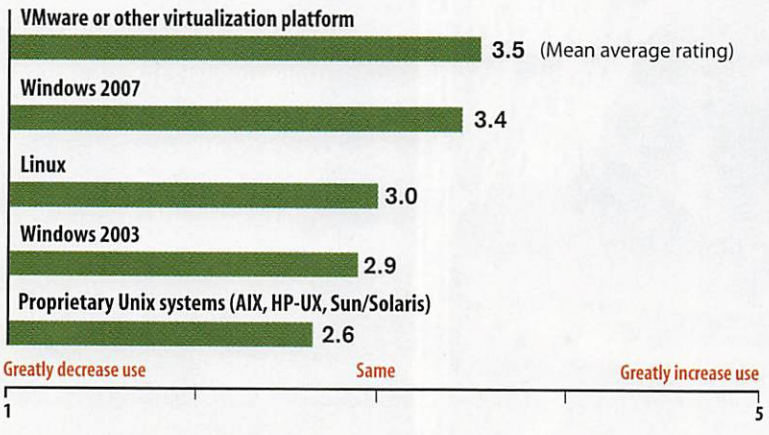
In our poll, 21% of those with information-sharing initiatives say they use Lean Six Sigma, and 29% use ITIL as an IT governance framework. Whatever approach is taken, the focus is on continuous process improvement (CPI). This isn't only a set of best practices—for many agencies, CPI represents a major cultural shift toward reliability, improving efficiency, reducing costs and resource usage, and improving quality and productivity

The military is leading the way, with the U.S. Army launching one of the largest enterprise-wide deployments of Lean Six Sigma we've seen as a key framework for development of its CPI Knowledge Center. The Navy's Second Fleet Command, meanwhile, is driving its process improvements using the ITIL framework, which focuses on key areas of organizational effectiveness, such as customer satisfaction, service delivery and support, application management, and security.

Michael Biddick is CTO at a federal consulting firm. He specializes in ITIL best practice frameworks. Write to him at mbiddick@nwc.com

WHAT'S IN, WHAT'S OUT

How do you plan to change your use of these OS technologies over the next 24 months?

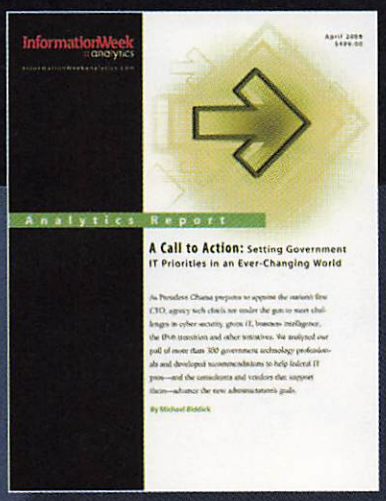


Data: ***InformationWeek Analytics*** Government IT Priorities Survey of 309 government technology professionals

Get the full-length Analytics Report at: *governmentpriorities.informationweek.com*

A Call to Action: Setting Government IT Priorities in an Ever-Changing World

The nation's first chief technology officer has a tough job ahead, but having a single individual to spearhead information-sharing initiatives across government agencies really will make a difference.


InformationWeek
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Analytics Report
A Call to Action: Setting Government IT Priorities in an Ever-Changing World

InformationWeek Analytics:

A Call to Action: Setting Government IT Priorities in an Ever-Changing World

As President Obama prepares to appoint the nation's first CTO, agency tech chiefs are under the gun to meet challenges in cyber security, green IT, business intelligence, the IPv6 transition and other initiatives. The Obama administration has defined dozens of technology initiatives that will impact the agendas and policies of multiple federal agencies for years to come. The challenges for government tech pros at all levels: Use IT to make government more transparent. Bring systems into "the twenty-first century." Secure the Internet. Ensure individual citizens' right to privacy, and shut down attackers who are intent on crippling the information network. Be green.

From our poll of more than 300 government technology professionals, *InformationWeek* Analytics developed recommendations to help federal IT pros—and the consultants and vendors that support them—advance the new administration's goals.

This *Information Week* Analytics Report, A Call to Action: Setting Government IT Priorities in an Ever-Changing World, details what federal technology decision-makers said about their current IT priorities, and how technology, budget and process will shape their initiatives in the coming years.

Maintaining Critical Communications, Even in a Crisis

When lives are on the line, losing contact isn't an option. Secure, reliable communications are absolutely critical for government agencies. In the case of a natural disaster, terrorist attack, or other large-scale emergency, the costs of communication failures are measured in lost lives or millions of dollars in property damage. **Read the entire brief** to learn more about secure communications solutions.

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The success of continuity programs is dependent on the availability of robust, effective and secure communications to provide Federal Agencies the ability to access critical applications and to quickly share vital information. Sprint has over two decades of experience with the Federal Government. **Access this paper** to view case studies and read about how leveraging a flexible IP core can enable Government voice, video and data applications.

Streamline Communications with One Simple Solution

In difficult economic times, organizations are required to increase efficiency while minimizing expenses. Launching new IT and Telecom initiatives often requires significant investment with a guarantee to provide long-term savings. As organizations evaluate their current communications infrastructure, several challenges can arise. **This brief** will show you how to solve your business challenges such as increased mobile workforces, expensive maintenance costs, and aging or legacy technology.

Government IT Priorities

Download the InformationWeek Analytics Report: A Call to Action: Setting Government IT Priorities in an Ever-Changing World and the Sprint resources outlined here at **governmentpriorities.informationweek.com**

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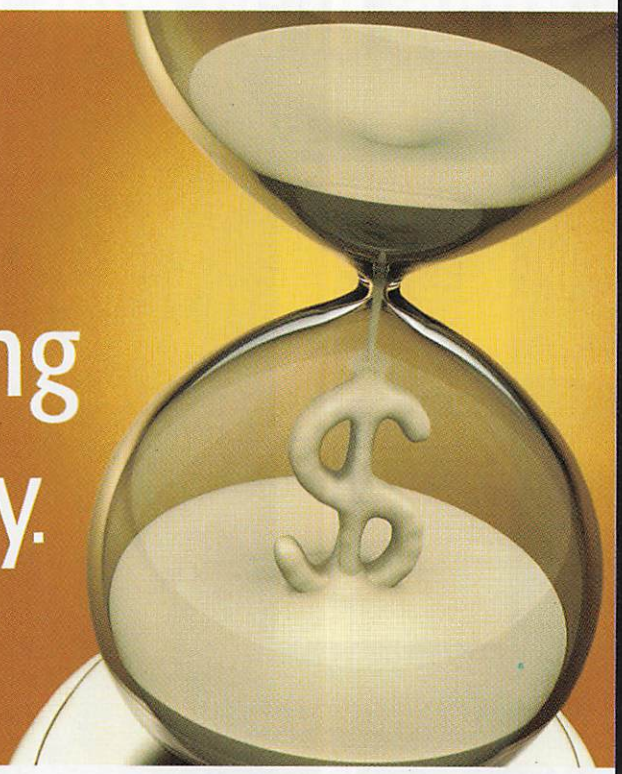

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Dr. Dobb's REPORT

Database Development

By Jonathan Erickson,
Editor In Chief

From e-science visualizations to Wall Street what-ifs, you know there's a problem when the talk turns to exabytes. But that problem isn't so much about too much data as it is about making sense of the data at hand. In other words, it's a question of data management—the architectures, policies, practices, and procedures you have in place for managing and enhancing a company's data assets.

What really stands out are the vendors that are providing tools to manage and analyze what's referred to as "big data." There are the usual suspects: Oracle, IBM, Google, Amazon.com, and FairCom. And then there are upstarts, such as Cloudera and Aster Data Systems, that are leveraging open source software such as MapReduce and Hadoop to build new businesses around big data.

Many of the technologies available to manage big data aren't new. In one form or another, column-oriented databases, data parallelism, solid-state drives, declarative programming languages, and cloud computing have been around for years. What's new is the emergence of "fringe databases," or database management systems that are appearing where you least expect sophisticated data management. For example, medical and consumer devices that once got by with flat files now require powerful database engines to manage the sheer volume of data being collected.

None of this comes without a price. What with big data on the rise, transaction throughput and concurrency requirements escalating, and data becoming more distributed, application complexity is increasing. To make it easier to manipulate data, it may have to be partitioned across multiple files or replicated and synchronized across multiple sites. And, of course, software developers are looking at complex data schema paradigms to accommodate their needs while still maintaining traditional relational access.

Hey, no one said it was going to be easy.

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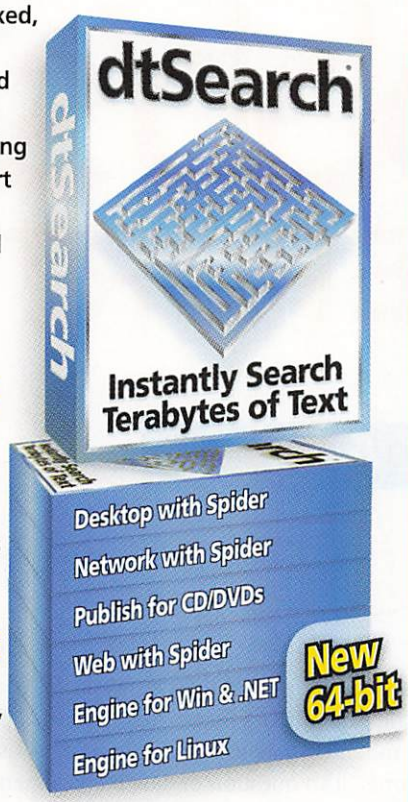

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3 Steps To Managing Data In The Cloud

By Ken North

The emergence of cloud computing raises a host of questions about the best database technology to use with this new model for on-demand computing. Ultimately, the cloud approach a company chooses determines the data management options that are available to it.

When evaluating the suitability of a database manager for cloud computing, there are three basic steps:

>> Consider the class of applications that will be served: data asset protection, business intelligence, e-commerce, etc.

>> Determine the suitability of these apps for public or private clouds.

>> Factor in ease of development.

The database manager you choose should be a function of the mission and the applications it supports, and not based on budgets and whether it will run in the enterprise as a private cloud or as a public cloud from a service provider. For instance, some companies turn to a cloud provider to back up mission-critical databases or as a disaster recovery option. Database-intensive apps such as business intelligence can be deployed in the cloud by having a SaaS provider host the data and the app, an infrastructure provider host a cloud-based app, or a combination of these approaches. And popular solutions for processing very large data sets, such as Hadoop MapReduce, can run in both the private and public cloud.

Databases, data stores, and data access software should be evaluated for suitability for both public and private clouds. Public cloud security isn't adequate for some types of applications. For example, Amazon Dynamo was built to operate in a trusted environment, without authentication and authorization requirements. At a minimum, database communications and backups to the cloud need to be encrypted.

Security in cloud environments varies based on whether you use SaaS, a platform provider, or an infrastructure provider. SaaS providers bundle tools, APIs, and services, so you don't have to worry about choosing the optimal data store and security model. But if you create a private cloud or use an infrastructure provider, you'll have to select a data management tool that's consistent with your app's security needs. Your database decision also will hinge on whether the environment supports a multitenant or multi-instance model. Salesforce .com hosts apps on Oracle databases using multitenancy. Amazon EC2 supports multi-instance security. If you fire up an Amazon Machine Image running Oracle, DB2, or Microsoft

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SQL Server, you have a unique instance that doesn't serve other tenants. You have to authorize database users, define roles, and grant user privileges when using the infrastructure-as-a-service model.

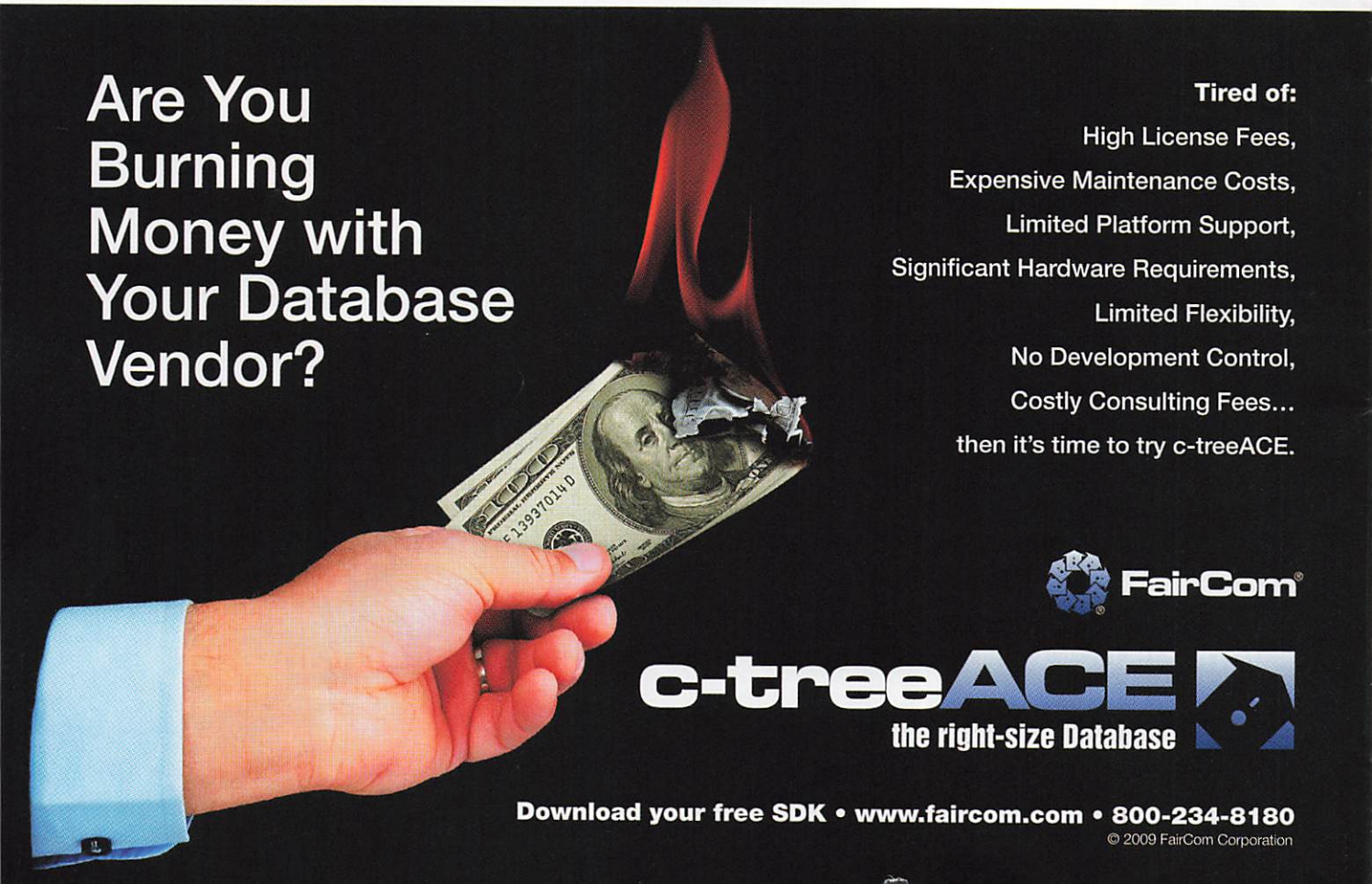
Developers' Choices

Database app development options for public cloud computing can be limited by the providers. SaaS offerings such as Google App Engine and Force.com provide specific development platforms with predefined APIs and data stores. Private cloud and infrastructure providers including GoGrid and Amazon EC2 let users match the software, database environment, and APIs to their needs. Besides cloud storage APIs, developers can program to various APIs for data stores and standard ones for SQL/XML databases. Programmers can work with SQL APIs and APIs for cloud services. For Amazon, that involves using Web Services Description Language and invoking specific Web services. For projects that use the cloud to power Web 2.0 apps, developers can use JavaScript Object Notation and the Atom Publishing protocol.

For new applications hosted in the cloud, developers look primarily to classes of data stores such as SQL/XML databases, column data stores, distributed hash tables, and tuple spaces variants, such as in-memory databases, entity-attribute-value stores, and other non-SQL databases. Choosing the right data store depends on the scalability, load balancing, consistency, data integrity, transaction support, and security requirements. Some newer data stores have taken a minimalist approach, avoiding joins and not implementing schemas or strong typing; instead, they store data as strings or blobs. Scalability is important for very large data sets and has contributed to the recent enthusiasm for the distributed hash table and distributed key-value stores.

One interesting approach is the ability to configure fault-tolerant systems and hot backups for disaster recovery. A private cloud can be configured and operated with fairly seamless failover to Amazon EC2, for example. You'll have to replicate data in the private and public cloud, implementing the Amazon APIs and availability zones, as well as IP assignment and load balancing for the private cloud. You'll also have to use server configurations compatible with Amazon instances to avoid breaking applications and services because of changes in endianness, the Java heap size, and other dissimilarities.

In short, the cloud is an effective



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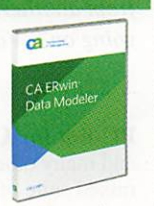

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elastic computing and data storage engine, but matching the right platform with the right database is critical. Doing this correctly requires evaluating the job and its security needs, as well as assessing how easy it is to design and implement the software. Carefully weighing these factors will lead you to the right conclusion.

Ken North is an author, consultant, and analyst. He chaired the XML DevCon 200x conference series, Nextware, LinkedData Planet, and DataServices World 200x.

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int twice( const int &y )
    { return 2*y; }

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    int k = bump(z) + twice(z);
    printf( "%d\n", k );
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    }
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Q&A: Open Database Alliance

Michael "Monty" Widenius created the MySQL database and founded Monty Program Ab. He recently spoke with Dr. Dobb's Jonathan Erickson.

Dr. Dobb's: What's the Open Database Alliance?

Widenius: It's a vendor-neutral consortium of vendors and individuals commercially supporting or delivering services around MariaDB and MySQL. Alliance partners will support each other's open source initiatives, and resell each other's services. This makes it possible for customers to get all the services they need from any vendor in the alliance.

Dr. Dobb's: What's MariaDB?

Widenius: It's a community-developed branch of MySQL with bug fixes and new features developed by the MariaDB community, of which Monty Program Ab is an active member.

Dr. Dobb's: Is SQL adequate for 21st century computing?

Widenius: Yes. SQL will be around for a long time because it's a very expressive language that's very easy to embed in Web-based applications.

Dr. Dobb's: What will be the biggest change in data storage in five years?

Widenius: SSD memory will force a paradigm shift in how data is stored and accessed, and a lot of old proven database algorithms have to be changed because there's no seek time anymore.

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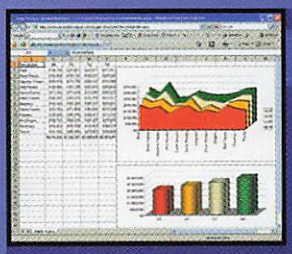

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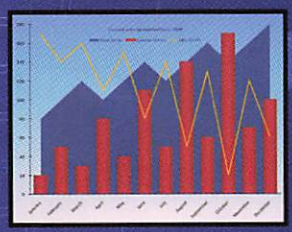

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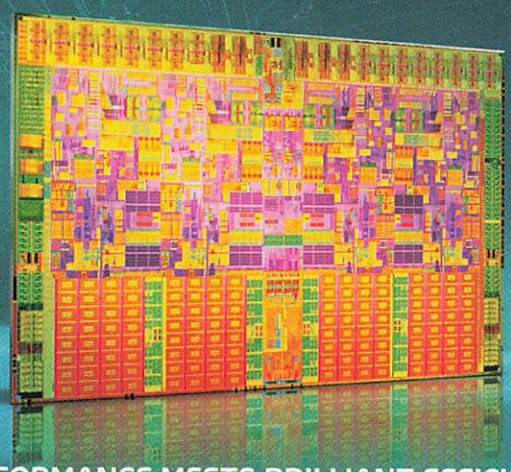

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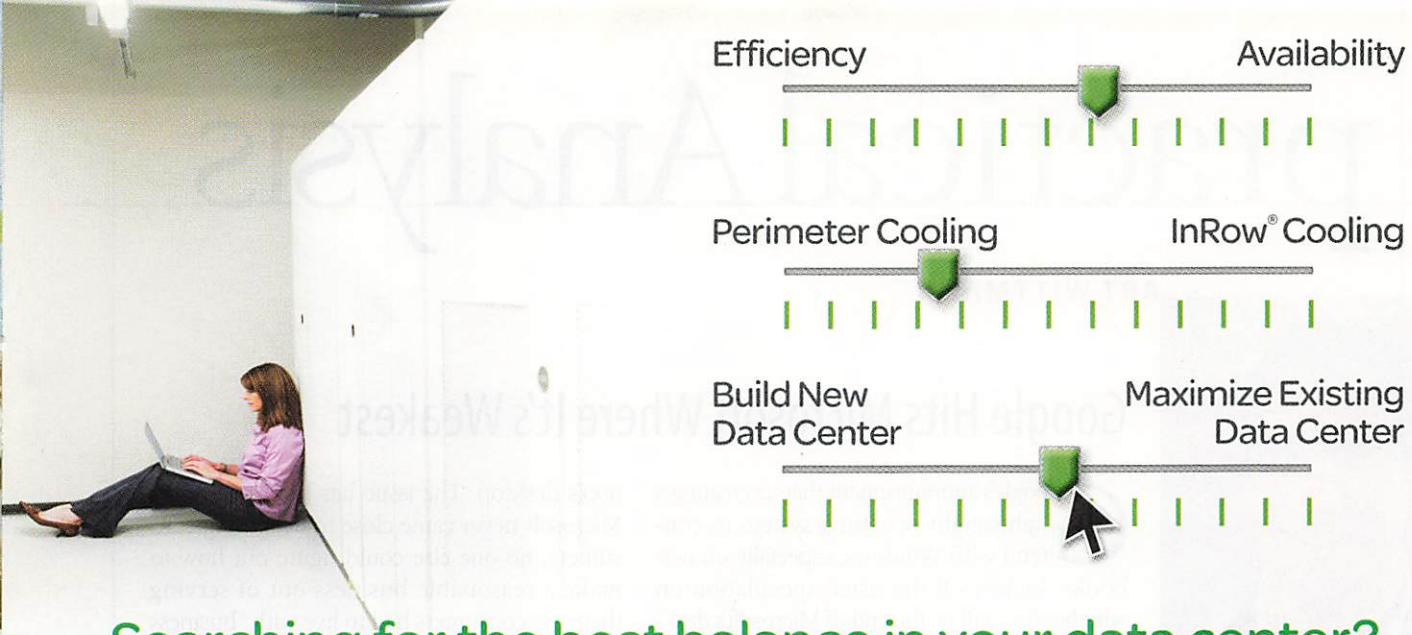

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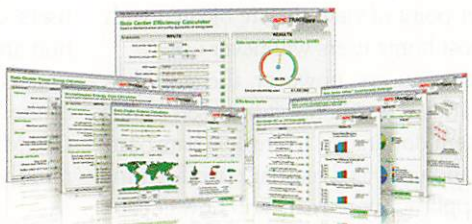

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practical Analysis

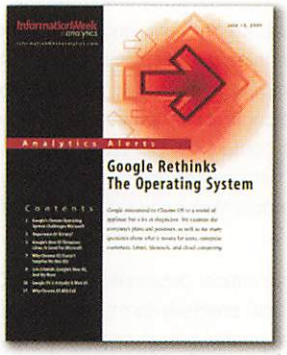
ART WITTMANN

Google Hits Microsoft Where It's Weakest

Consumers forced to live with "business lite" Windows are finding alternatives from Google, Apple, and others. Can Microsoft adapt?

Google's announcement that it's creating a lightweight operating system to contend with Windows, especially on netbooks, kicked off the usual speculation on whether this will be the end of Microsoft's desktop dominance. The safe, not-too-insightful analysis is that Google Chrome OS won't mean much in the near term. In fact, it appears that Google has jumped the gun with its announcement, as my colleagues searching for details from the company have dug up very little.

So let's take Google out of the equation for a second. Before we can figure out who's likely to knock off Microsoft, we need to figure out how Microsoft got where it is. Certainly, its ability to play hardball with OEMs and its other aggressive business practices are part of the equation, but that's not the whole story. To my mind, Microsoft never found a truly comfortable place with consumers. Its operating system and applications are more expensive than consumers have ever wanted to pay, and while they're easy enough to use, from a consumer point of view, they're bloated with features most home users will never use.



For business users, however, the story has been much different. Microsoft has used its operating system dominance to create what's been an elegant and unrivaled marriage of office productivity applications, e-mail, and now collaboration with SharePoint. Google CEO Eric Schmidt has done this dance with Microsoft during his stints at Sun and Novell and knows better than to take on Microsoft at the business user's desktop. The issue has been that while Microsoft never came close to delighting consumers, no one else could figure out how to make a reasonable business out of serving them. So consumers had to live with "business lite" Windows systems that didn't serve their needs, or go to the more expensive systems from Apple, or just settle for an iPhone, which for many is all the computer they need.

The combination of a netbook and Chrome OS is aimed right at consumers. The sub-$500 (possibly sub-$300) price of the combo and a better security profile, faster boot times, smaller memory footprint, and smart integration with online services and 3G/4G wireless appeal to consumers. As that appeal takes shape, we'll see a morphing of what we think of as a netbook. With a better, tighter OS, there's no reason you won't see "gamer quality" netbooks with fast graphics and 17-inch screens popping up for close to $500.

So while the Chrome OS isn't likely to have a short-term profound impact on business users, consumers are finally getting the attention and the products they deserve. Microsoft understands the stakes—and in an ironic turn of the tables, while Google touts a vaporous OS, Microsoft is delivering Windows seven months early. Let the games begin.

Art Wittmann (awittmann@techweb.com) is director of InformationWeek Analytics. Download our free report on Google's Chrome OS: informationweek.com/alert/chromeos.

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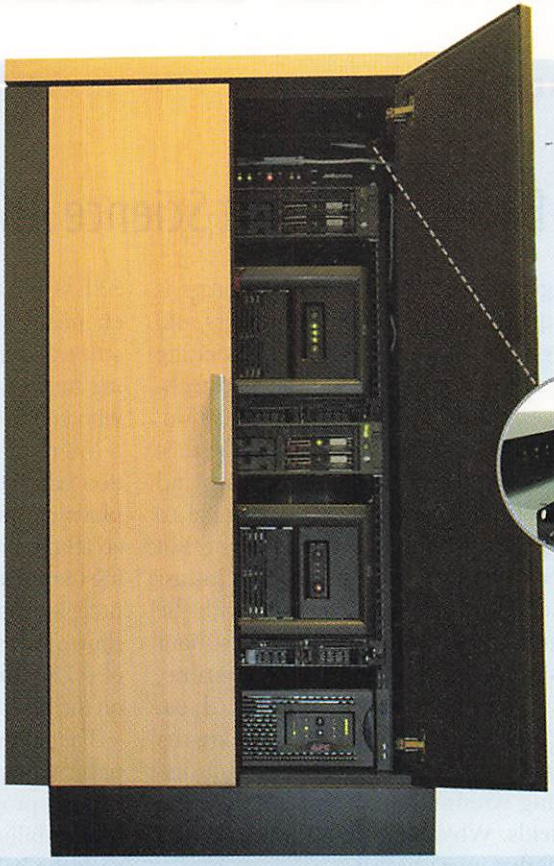

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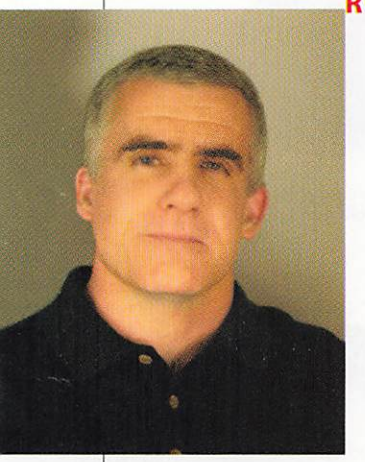


Don't equate education in science and math with vocational training. STEM education is so much more.

The Backlash Against Science And Math Education

A growing chorus of commentators is questioning whether employers and government officials are exaggerating the urgency of boosting STEM (science, technology, engineering, and math) education. The critics' arguments go something like this: The jobless rates for U.S. engineering and other technical occupations are close to record highs. Math expertise isn't the hot commodity it once was, especially in industries such as finance and insurance with the crash and burn of quantitative investment and risk management models. Meantime, technical grads churned out in India, China, Russia, and other countries are flooding the global market, depressing salaries and discouraging young Americans from entering those fields. Why invest in STEM education if the market won't bear it?

In an excellent *USA Today* story on the STEM debate, Lynne Munson, executive director of Common Core, a nonprofit that supports liberal arts education, takes the argument to an absurd extreme. "You want more physicists?" she asks. "Make sure kids are getting literature and history."

OK, most of us get that high schools and colleges aren't vocational institutions. But STEM education is about much more than job training; it's about preparing people to think and function in an increasingly technical society. And when it comes to jobs, STEM doesn't equal electrical engineering or Java programming or genetic research or any other single professional discipline. It's a basic competency that underpins a range of occupations—some of them not even conceived yet—in a range of industries.

The future of American business lies not just in high tech and finance, but also in other tech-driven industries such as energy, healthcare, pharma, transportation, and specialty retail. There, professionals with a solid STEM base—data analysts, researchers, chemists, statisticians, and engineers of all stripes—are more likely to secure high-paying futures than, say, French literature grads who can think fast on their feet.

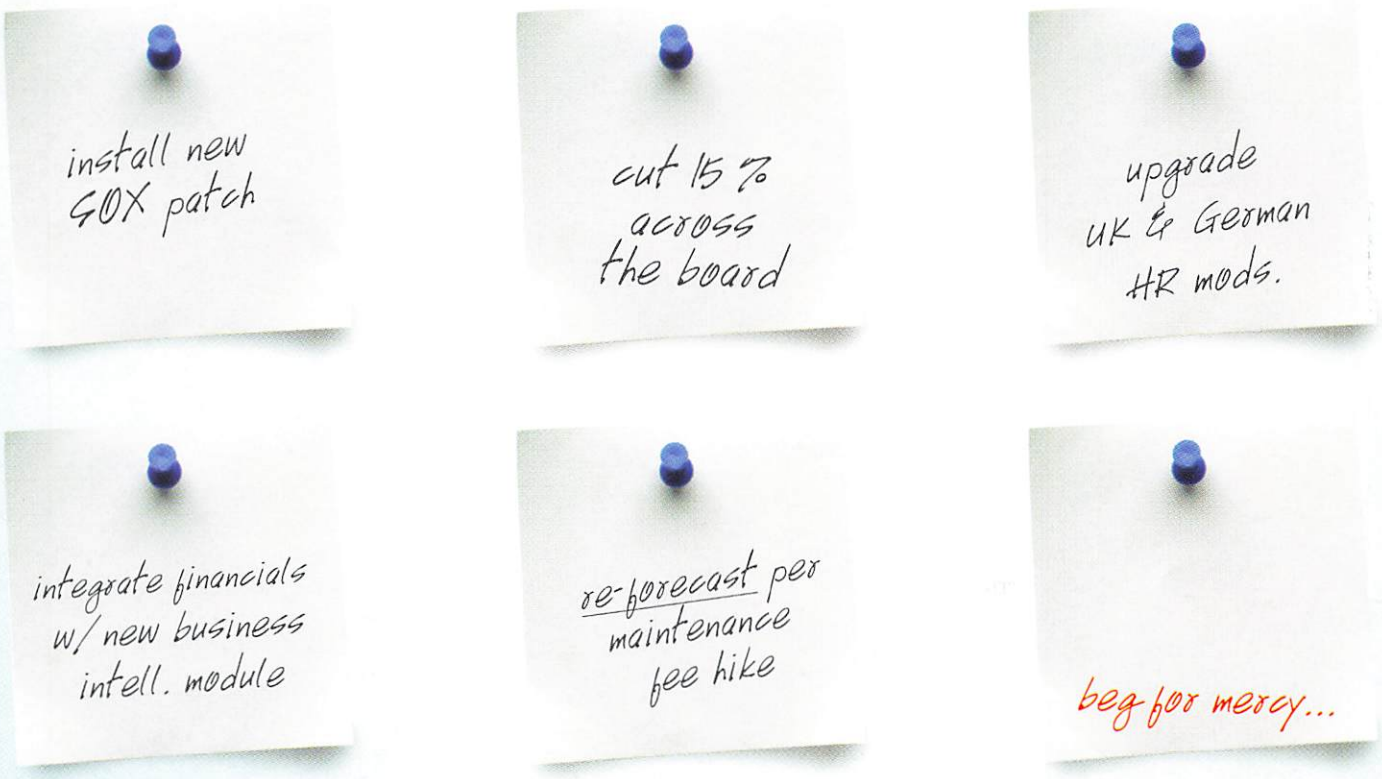
We must resist going cold on STEM education based on the latest job stats. The unemployment rate for electrical engineers reached an all-time high in the second quarter, according to the Bureau of Labor Statistics, but every profession is under intense cyclical pressure, as shown by the overall U.S. unemployment rate of 9.7%. Are we to put all forms of education on the back burner in this brutal economy?

That doesn't mean we should pour taxpayer money indiscriminately into STEM education programs. Government officials who call for billions of additional dollars often do so at the behest of special interests.

In its most recent study of fourth- and eighth-graders, released in December, the International Association for the Evaluation of Educational Achievement found that U.S. fourth-graders ranked eleventh among 36 countries and U.S. eighth-graders ranked ninth among 48 countries in math. In science, U.S. students ranked only slightly above average. So the results, while not astounding, show that American kids are at least holding their own.

But we can't take our eye off the ball. In a session at the *InformationWeek* 500 Conference (*informationweek.com/500/09/conference.htm*) in September, some of the tech industry's leading CEOs will be discussing what the U.S. education system must do to improve this country's tech competitiveness. They clearly have a vested interest, but so do you. We hope you can join us there.

Rob Preston is VP and editor in chief of InformationWeek. You can write to Rob at rpreston@techweb.com.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